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CONTENTS AND SUBJECT INDEX

The University Surgical Clinic: Its Functions and Organization. Dean Lewis, M.D., Baltimore.....1493

Saving Time in the Medical School. Ray Lyman Wilbur, M.D., Stanford University, Calif.....1498

Selecting a Hospital for an Internship. Henry A. Christian, M.D., Boston.1499

Medical Education and Medical Service: Some Further Facts and Considerations. William Allen Pusey, M.D., Chicago.....1501

Medical Education and the Yale Announcement. Charles R. Stockard, M.D., New York.....1508

Physical Fitness in College. William R. P. Emerson, M.D., Boston.....1511

Lead Poisoning in Nursing Infants: Report of Two Cases Due to the Use of Lead Nipple Shields. Herbert B. Wilcox, M.D., and John P. Caffey, M.D., New York.....1514

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Fixation of Fractures of the Clavicle: Another Method. J. E. M. Thomson, M.D., Lincoln, Neb.....1517

Bilateral Gonorrheal Salpingitis in a Child Three Days After Initial Infection. Minas Joannides, M.D., Chicago 1518

Instrument for Introducing Hemostatic Bags in Suprapubic Prostatectomy. E. O. Swartz, M.D., Cincinnati...1518

SPECIAL ARTICLES

Religious Healing: Preliminary Report. Alice E. Paulsen, Ph.D., New York City 1519

The Technic of Medication: Twentieth Article. Bernard Fantus, M.D., Chicago 1524

Active "Correspondence" Diploma Mills: Report of the Council on Medical Education and Hospitals.....1527

SOCIAL MEDICINE AND MEDICAL ECONOMICS

Social Medicine: A Method of Teaching the Public Health Point of View to the Medical Student. B. Franklin Royer, M.D., New York.....1571

EDITORIALS

State License Statistics.....1551

"Hooch," "Home Brew" and Copper.1552

The Hemolytic Constitution.....1553

CURRENT COMMENT

Licensing Foreign Physicians.....1554

Arkansas Still Inactive.....1554

(Subject Index on next page)

STATE BOARD STATISTICS, 1925

Annual Presentation by the Council on Medical Education and Hospitals of the American Medical Association of the Results of State Board Examinations 1533

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Another SAUNDERS' BOOK on Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.

A. M. A. Council on Medical Education, and Hospitals, state board statistics....1533
active "correspondence" diploma mills..*1527
schools offering summer courses.....1568
Abdomen, laparotomy, drainage after..ab-1588
Abortion, criminal, proof of other operations admissible Ml-1574
Achylia, gastric ab-1583
Acidosis in chronic nephritis.....ab-1580
Acne, importance of.....1563
Alcoholism in children ab-1587
American University *1529
Anemia, goat's milk ab-1592
pernicious, and cord degeneration.....ab-1578
Angina pectoris, epidemic ab-1589
Arkansas still inactive.....E-1554
Arsphenamine, testing of.....ab-1589
Asthma in children.....ab-1587
Blindness in youth, cause of.....ab-1581
Blood pressure in women.....ab-1582
pressure, high, vs. protein foods....ab-1579
Bone, healing of drill holes in.....1568
Bonomo, Lorenzo, death of.....1563
Book Notices.....1572
Books Received.....1573
Cancer and dextrose.....ab-1590
in Havana about 1519.....ab-1588
parasitic origin ab-1589
problem vs. radium therapy.....1561
Capillaries, structure and function.....ab-1589
Cardiovascular Diseases in Veterans' Bureau hospitals ab-1583
Carrier problem ab-1586
Cerebrospinal Fluid test.....ab-1589
Cesarean Section, uterus rupture after...ab-1591
Cholesterol, clinical import.....ab-1592
Christian Science *1520
Clavicle, fractures, fixation of.....*1517
Colon cancer ab-1579
polypi ab-1579
Constitution, hemolytic E-1553
Copper, "hooch" and "home brew".....E-1552
Correspondence 1567
Cowpox virus inoculation.....ab-1589
Crime statistics, England.....1561
Cyanide poisoning from shoe cleanser...ab-1589
Deaths 1565
Democritus, Hippocrates' visit to.....ab-1592
Diabetes Mellitus, mechanism of.....ab-1592
dietetic treatment ab-1586
insulin and ab-1589
Diarrhea in children.....ab-1581
Diphtheria, anatoxin in mass vaccination.ab-1586
Disinfectants and *pH*.....ab-1589
Divine Science *1524
Edema from shaving creams.....1568
Encephalitis, Epidemic, sequels, basal metabolism in ab-1581
Eosinophilia, constitutional ab-1587
Erythema multiforme complicating vaccination ab-1583
Erythrocytes, size, vs. exercise.....ab-1586
Evidence, witness, expert testimony evaluated Ml-1574
Eye, pressure in, reduction ab-1592
Fallopian Tubes, volvulus ab-1580
gonorrheal salpingitis in child.....*1518
Fertility and health ab-1582
Fetus, death, roentgen diagnosis.....ab-1592
Fever, "channel fever".....ab-1587
Foreign Letters.....1560
Gallbladder, ascaris ova in ab-1584
Genitals, female, prepared for marriage..ab-1592
Goiter, exophthalmic, prognosis.....ab-1578
exophthalmic, total thyroidectomy in.ab-1578
Gonorrhea, infection, in child.....*1518
Headache and mental disease.....ab-1583
Health and fertility ab-1582
of students in college.....*1511
public officer, expenses, out of state conventions Ml-1575
public, teaching viewpoint in.....ME-1571
Heart block, nervous control in.....ab-1580
block, electrocardiography of.....ab-1587
block, ventricular rate in.....ab-1586
insufficiency, digitalis in.....ab-1582
rupture, spontaneous ab-1578
Hemolytic constitution E-1553
Herniotomy, double, incision for.....ab-1586
Herpes, virus of ab-1589
Hip joint, congenital dislocation.....ab-1590
Hippocrates' visit to Democritus.....ab-1592
"Hooch," "home brew" and copper.....E-1552
Hormones and vitamins.....ab-1590
Hospital, selecting one for an internship.*1499
charitable, taxation of nurses' home..Ml-1575
Hyperthyroidism, reflex in.....ab-1588
Infants, intestinal flora of.....ab-1580
lead poisoning in.....*1514
new-born, vs. diet in pregnancy.....ab-1584
new-born, gastro-intestinal hemorrhage...1563
Infections, focal ab-1583
surgical treatment ab-1591
Insanity, contractual capacity.....Ml-1575
Instrument for introducing hemostatic bags in prostatectomy *1518
Insulin in toxicosis of infants.....ab-1589
International Medical Union.....1562
Internship, selecting hospital for.....*1499
Intestines, flora, chemistry of.....ab-1580
Iodine vs. thyroxin ab-1580
Jaundice, silent infection in.....ab-1589
Jewish Science *1521
Joints, disease, implant treatment.....ab-1587
tuberculosis, treatment ab-1584
Katakar oil poisoning.....ab-1585
Kidney, counterbalance of.....ab-1579
Labor forceps, Kielland.....ab-1590
older primiparas ab-1591
pituitary extract to initiate it at term.ab-1592
presentation of hydrocephalic child....ab-1592
Lead poisoning in nursing infants.....*1514
Leprosy in Moluccas.....ab-1591
Licensure, improved standards of.....1548
diploma mills *1527, E-1551
diploma mills in Arkansas.....E-1554
licensing foreign physicians.....E-1554
statistics 1533, E-1551
Lincoln-Jefferson University *1527
Liver and water metabolism.....ab-1589
Lung, cancer, primary.....ab-1578
abscess, treatment ab-1577
Malaria, crusade against, Italy.....1563
Marriage, female genitals prepared for..ab-1592
consultation centers, Germany.....1564
license vs. medical examination.....1562
Marriages 1565
Maygries, death of.....1562
Measles, spleen in.....C-1567
Medical Education and medical service....*1501
expensiveness *1506
university surgical clinic.....*1493
Yale announcement 1508
Medical Education, Registration.....1568
Medical Service and medical education..*1501
Europeanizing *1505
Medication, technic *1524
Medicine, social, teaching.....ME-1571
Medicolegal 1574
Meetings, Coming Meetings.....1570
Meningioma ab-1579
Meningitis, meningococcus, in infant..ab-1587
tuberculous, statistics ab-1585
Mental Disease and headache.....ab-1583
prevention, Italian league for.....1563
Milk, human, phenobarbital in.....ab-1591
Moluccas ab-1591
Morphine, physician sentenced for supplying 1561
Mycoses ab-1592
National Board of Medical Examiners....1549
Nephritis, acute syphilitic ab-1578
ammonia and acid excretion in.....ab-1580
chronic, acidosis in.....ab-1580
Neuralgia of glossopharyngeal nerve....ab-1582
Neuromas cause pain with cystic ovaries..ab-1587
New Thought *1522
News 1555
Nipple shields, lead poisoning from.....*1514
Nostrums, tax abolished, Japan.....1565
Obesity, genesis of ab-1588
Orange juice as accessory food.....ab-1579
Osteosclerosis fragilis ab-1589
Ovary cysts, pain in, from neuromas....ab-1587
function of ab-1589
Parathyroid graft in tetany.....ab-1587
Pellagra, diet in.....ab-1583
Peptic Ulcer, etiology ab-1584
frequency of symptoms.....ab-1583
perforated ab-1584
Peritonitis, primary pneumococcus.....ab-1579
Phalanges, giant cell tumor of.....ab-1579
Phenobarbital in breast milk.....ab-1591
Physical Education 1564
Physical Fitness in college.....*1511
Physicians, rural, average age of.....*1501
action against hospital.....1560
foreign, licensing of.....E-1554
increase of, Japan.....1565
oversupply, Italy 1563
supply *1501
Plague, bubonic, iodine in.....ab-1585
Pleurisy, significance of.....ab-1581
Pneumonia, postoperative ab-1576
Polycythemia vera, vascular changes in.ab-1578
Pons, hemorrhage in, after tonsillectomy.ab-1585
Pregnancy and diet.....ab-1584
capillaries in ab-1591
ileus ab-1590
or ovarian hemorrhage ab-1591
periodicity of, in Japanese.....1565
syphilis prevented by.....ab-1578
Propaganda for Reform.....1566
Prostatectomy, suprapubic, hemostasis in.ab-1579
suprapubic, new instrument for.....*1518
Protein foods vs. hypertension.....ab-1579
specific dynamic action.....ab-1591
Puerperal Infection, treatment.....ab-1588
Pus cells, supravital staining of.....ab-1588
Queries and Minor Notes.....1569
Quinine rash ab-1590
Rabies, cause of.....1564
Rat Bite Fever ab-1583
Religious healing *1519
Research, Medical *1494, *1507
Rheumatism, prevention ab-1586
acute rheumatic fever ab-1580
Rickets, irradiated cholesterol in.....ab-1584
Roentgen rays, action of.....ab-1591
injury, action against hospital for.....1560
Schools, Medical, recognition of.....1542
failure to care for applicants.....*1503
saving time in *1498
summer courses in 1926.....1568
Sclerosis, multiple, fever treatment....ab-1588
Shaving creams, irritation from.....1568
Sinuses, meningioma of.....ab-1579
Smallpox, virus of.....ab-1589
vaccination against, Belgium.....1562
Social Medicine and Medical Economics....1571
Society Proceedings.....1578
Spasmophilia ab-1590
Spinal Cord degeneration and anemia..ab-1578
Spirochetes, pure cultures ab-1590
Splenomegaly in measles.....C-1567
Stammerers, psychogenesis of.....ab-1581
State Board Examinations.....1568
State Board statistics for 1925....1533, E-1551
Streptococci, blanching phenomenon....ab-1590
Streptothricosis, pulmonary ab-1583
Students, Medical, quality of.....*1505
getting them from the country.....*1504
Sulphur, pharmacology ab-1590
Surgeon's hand 1561
Surgery, university surgical clinic.....*1493
Syphilis, fever in ab-1592
in working classes ab-1586
prevention vs. pregnancy ab-1578
treatment, bismuth ab-1578
Tar, noncancerigenic 1562
Tetany, parathyroid graft in.....ab-1587
Therapeutics, religious healing.....*1519
imagination in 1562
Thyroid, substernal ab-1578
Thyroidectomy, total, in thyrotoxicosis.ab-1578
Thyroxin vs. iodine ab-1580
Tonics and Sedatives.....Adv. page 22
Tonsillectomy, hemorrhage in pons after.ab-1585
Tonsils, enlarged, splenomegaly in.....C-1567
Tooth root, retained, is sneezed out....ab-1585
Toxicosis, insulin in, of infants.....ab-1589
Tryparsamide, injection of.....1568
Tubercle Bacillus strains, reaction curves.ab-1585
Tuberculin, allergy to ab-1589
plus cowpox virus, inoculation.....ab-1589
Tuberculosis, blood cholesterol in.....ab-1588
diet in ab-1581
control, Japan 1565
flocculation test in ab-1581
gastric secretion in.....ab-1588
immunization against ab-1588
in goats ab-1592
pulmonary, diagnosis in children.....ab-1585
pulmonary, thoracoplasty in.....ab-1581
skin and lymph nodes in.....ab-1590
treatment, Sanocrysin ab-1589, ab-1591
tubercle bacilli extracts in.....ab-1587
virus, virulence of ab-1585
Typhoid skin test ab-1588
University of Trinity College.....*1527
University, physical fitness in.....*1511
Ureter, stricture of ab-1583
Urine, acidity, rhythm in.....ab-1580
Uterus, cancer ab-1582
fibromyomas ab-1588
rupture after cesarean section.....ab-1591
Verruca of mouth ab-1581
Vertigo, surgical treatment.....1562
Veterans' Bureau hospitals, cardiovascular diseases in ab-1583
Vibrios from feces, cultivating.....ab-1585
Vitamins and hormones.....ab-1590
Water metabolism and liver.....ab-1589
Workmen's Compensation, peritonitis, when compensable Ml-1574
Yale University announcement and medical education *1508

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THE UNIVERSITY SURGICAL CLINIC

ITS FUNCTIONS AND ORGANIZATION *

DEAN LEWIS, M.D.

BALTIMORE

Each generation has its own problems to solve. Not infrequently these are not new. Many are inherited from a previous generation or generations. Some have been partially solved; some have never been taken from the pigeonhole in which they have been conveniently placed.

The question which is being asked almost constantly these days is, What is the object of medical education? This question being answered by the doctor or educator most vitally interested, he usually proposes some system of education which is guaranteed to remedy all the defects and to lead rapidly to the establishment of the ideal. At present there is no need to enumerate the panaceas which have been suggested which, if taken, would place the recent graduate in his proper relation to the patient, to investigation, to industry and to the rural communities which, if they do not organize in self defense, are apt to have forced on them a mediocre profession by some of our most practical medical educators.

Each succeeding generation should start higher in the scale of knowledge than the preceding one. If the recent graduate were to be content with the knowledge of the preclinical branches that most of us have after several years of what may be designated as fairly successful clinical work, the level of the profession would sink rather than rise with each succeeding generation.

The object of a medical education is to enable the student to attain the highest level of knowledge in the field of medicine and its subsidiary branches attainable for him within the limits of time which may be given to the subject, when provided with the needed and best attainable physical equipment. The faculty should arrange the student's time and the sequence of subjects taught, and the lay boards of universities and hospitals should supply the necessary equipment running smoothly so that this educational system may go on indefinitely without jars and an ever increasing efficiency in productive scholarship. The most intimate relationship is thus established between trustee, teacher and student. Judging from the literature which has accumulated on medical education during the last sixty or seventy years, I believe that we are justified in stating that the progress has been slow. High points have been reached; then the wave has receded to a dead level. We are still looking for the ideal curriculum, discussing the elective system; academic freedom; the type of professor required; the method of his appointment; the character of examination given by state and national boards; whether the part or full time system is best, and whether the clinical studies should be carried on in preclinical years.

The following statement, made about fifty years ago, seems essentially modern:

> If I am not mistaken, our medical faculties are just now generally inclined to give greater weight to academic work; hence the cries of the Philistines to the effect that practical sound training of the physician is being neglected and that too much weight is placed on scholarship. Even if this be granted in certain respects, and it is true that definite methods of instruction have not been found for much of the new content given to the natural sciences through the investigations of the last decade, I can see in it no great misfortune or any reason for threatening to change the character of our universities. It would surely have been much more regrettable if other nations had surpassed us in scientific research while we clung to cast iron forms.

This statement seems quite modern and up to date. The seeming desire or so-called need of making all medical education practical is discussed ad libitum today. There can be little argument—scientific education is the most practical; for practice must be based on facts revealed by science, and the scientifically prepared physician will be able to render to the sick in his community a service, not necessarily a sympathy, which is dependent largely on the character of the man, the value of which cannot be measured.

The present day tendency to place clinical subjects in preclinical years seems to me to be bad. There should be no need of making concessions in order to interest the student in preclinical subjects which form the foundations of the clinical branches, if they are properly presented.

The student acquires the sense of scientific training only in his student days. A developing scientific spirit is often completely killed by the early development of medical routine. The importance of an early scientific medical training cannot be overemphasized. The interest developing from a spirit of investigation or close thinking often determines the student's intellectual level for the remainder of his life.

DEFECTS IN MEDICAL EDUCATION

There are defects in any system. These, perhaps, are not due so much to the system as to human nature, and there is a good deal of human nature in all of us. I have been associated with medical students for a

* Delivered at a dinner given Dr. Lewis, Jan. 22, 1926, by the surgical staff of Johns Hopkins University Medical Department, alumni and friends.

number of years as a teacher of anatomy and surgery, and from time to time have been greatly discouraged and disappointed because principles were not known, facts forgotten and the relative values of different clinical phenomena unappreciated. We are inclined to think that the student should be as familiar with these things as we are, and disregard the fact that twenty years should permit one to accumulate many facts, if we are endowed with only an ordinary mental equipment. The teacher should place himself in the student's position, rather than place the student in his. A regard for the relative position of the two as to time and experience is hard to maintain.

The two great defects in medical education at the present time are the failure to bridge the gap between the preclinical and the clinical years and to correlate clinical and pathologic findings, thus giving the picture of disease as a whole. Preclinical teachers are often severely criticized because of what is regarded as poor preparation of students when they reach the clinical years. Each preclinical subject is a science in itself and should be so taught; but from time to time the application of the science to the clinic might be taught to advantage. The teachers are often separated and have no opportunity or even make no effort to know the problems which they have in common and which might easily be solved by free discussion. It is as much the function of the clinical teacher to carry on some of this instruction through the clinical years as it is the function of the preclinical teacher to initiate it. It would be an excellent idea for the anatomist and surgeon, the pathologist and the professor of medicine, the pharmacologist and the professor of therapeutics and medicine to meet groups of students or the entire class during the last quarter or trimester of the second year and discuss freely the scientific phases of their work and the application of principles learned to disease and injury. It is much more important that the teachers know and understand one another's points of view, problems and methods than that clinical work be begun early in the medical curriculum.

Medical teaching is disconnected. It is rare for a student to observe disease throughout its entire course or treat an injury from its inception to recovery, when the patient can be returned to the work in which he was originally engaged. He may observe the gross clinical picture at one time, the gross pathologic picture at any other, and the microscopic at still another. These may even be demonstrated in other departments. Too frequently the whole picture is not presented and impressions which should be correlated are disconnected. But rarely with a small material, for example, is a student able to follow a fracture throughout its entire course, to note the indications for a change of fixation or traction apparatus, to study the progress by roentgen-ray examination and to follow the nerve and muscle injuries which are not infrequently associated with the fracture. This sometimes is due to a low bed capacity, and the turnover must be rapid in order to provide a diversity of clinical material. The argument is frequently made that a large material is not necessary, because diagnosis is taught in other departments, and that repetition is not necessary. Clinical knowledge is based on accurate observation. Variation in the clinical picture must be recognized if a clinician is to be developed, and repetition may become the basis of knowledge.

During the last few years, there has been a tendency to minimize the importance of clinical medicine and surgery. While a firm believer in the laboratory and its place in the general scheme of medical education and practice, I believe that the importance of the laboratory has been overemphasized. During a reform there is always a tendency for the pendulum to swing too far. We are not as keen observers or reasoners as the practitioners of the preceding generations. History taking is neglected, and the five senses are atrophied or rapidly becoming so from disuse or insufficient use. It is so much simpler now to make roentgen-ray examinations in case of a suspected fracture than to study deformities, determine the point of tenderness and make accurate measurements, that the old well known signs and symptoms of fracture and dislocations are hardly known. Clinical methods must be emphasized and taught, with the distinct understanding that laboratory findings will be used as supplementary facts to aid in the solution of the problem. The tendency to return to a sane, well developed scheme, in which the patient is still in the center of the picture from which the clinician cannot divorce himself, is rapidly developing. The percentage of error in diagnosis is undoubtedly much higher in that so-called clinician who relies largely on laboratory data as a diagnostic method than in the clinician who deals primarily with the patient and uses laboratory findings as needed and in their proper place. The test of the system is the highest percentage of correct conclusions.

Sometime in his course the student should do intensive work in some subject. He should be thorough, for if he does thorough work in one subject he has laid the foundation for a career which will be satisfying. He will have a hobby which he may ride.

During the last few years, the medical curriculum has been changed from time to time; many different instructional methods have been devised, and it has at times seemed to me that an almost continuous experimental program has been tried out on the medical student. Freedom in a curriculum is absolutely necessary and equally so is discipline. Ability and talents are not hampered or stifled in their development by strict discipline, if opportunity is afforded for scientific and advanced clinical work after the prescribed course is completed. It has been wisely said that no amount of discipline will transform slack, lazy, stupid students into energetic, industrious, intelligent doctors. If discipline will not work this startling transformation, it is more than certain that the spoon feeding of many of the ideal or standard curriculums will not make a hardy, self reliant, independent, thoughtful practitioner out of a fat, pasty, rickety student.

RESEARCH

Some of the students, stimulated by contact with a suggestive teacher or because endowed with imagination or curiosity, will attempt investigation. Not infrequently, I am amazed at the conviction of some of those in authority that students with investigative ability can be selected with certainty and ease. Many who discuss this most glibly are entirely lacking in this ability themselves, and would never strike a spark of imagination in any with whom they come in contact. Christian, in an address made at Chicago recently, emphasizes the difficulty of selecting students with investigative ability, and states that some schools taking only a few students have not justified the claims made in their selection.

Investigators are born, not made, and their true worth is often unrecognized by those of their own generation. Disagreeing with those in authority and running counter to tradition, they not infrequently encounter difficulties.

Investigation must be carried on. Vocal research is to be discouraged, especially that type which is so anxious to see that the other man should have the opportunity. Research is fostered by precept rather than by preachment. What is research? It has been described as a frame or attitude of mind. Medical research is the by-product of medical education. Unless a student comes in contact early with a man with an investigative turn of mind, he will not be inspired to search for the new and unknown, or even become familiar with the methods employed.

Billroth has defined research as well as any one I know. His definition justifies the smallest effort. He states that there are questions to which there are no intuitive answers. Observation must be deepened to scientific research, and that means long, hard work. Nature yields her secrets only in return for arduous labor. The method of research, of positing the question and answering the question posited is invariably the same whether we have before us a blooming rose, a diseased grape vine, a shining beetle, the spleen of a leopard, a bird's feather, the intestines of a pig, the brain of a poet or philosopher, a sick poodle, an hysterical princess, or a fractured femur. The most essential task of the study of science is precisely to convince the student of this and to familiarize him with it.

There is apt to be a lack of sympathy between the preclinical teacher and the clinician. Frequently, they do not have a proper appreciation of the character and value of each other's work. When teaching anatomy, I have not infrequently heard the clinician who attempted to analyze critically 100 cases of gallstones or 100 cases of duodenal ulcer, in order to determine accurately the symptoms, chemical changes in the gastric juice, indications for operation, and prognosis, spoken of rather derisively, and later, as a surgeon, I have seen a half pitying smile cross the clinician's face when vital staining of the islands of Langerhans was discussed. The attitude of mind with which the problem is approached is the important thing. Hasty publication should be discouraged. The man must be judged by the work which stands the test of analytic controls, rather than by the amount which is put out. It is unfortunate that from time to time appointments are made on research, in which the problem is suggested to the man, the method of attack determined, and the results put together by the director of a department. The early sterility of men who supposedly made brilliant beginnings is thus readily understood. Investigation should be independent. The problem may be suggested by another; the line of the attack and the solution of the problem should be determined and made independently.

Research is to be cultivated and the attitude of mind commended, even if the results are small. But few revolutionize the subject in which they are working and many contribute small beginnings which, accumulating, hasten the solution of the great problem.

INFLUENCE OF PERSONALITY

Teaching and the encouragement of research are two of the functions of a surgical department, the establishment of a school of surgeons the third. It has fallen to the lot of but few surgeons so to influence a group of young men that they have contributed to the science and teaching of surgery and have in turn developed a group to carry on the work. It is difficult, almost impossible, to determine the qualities which enable a man to do this. He must have the ability to recognize unusual talents in young men; must be unselfish, giving the brilliant student full opportunity and credit for his work, and must be willing to delegate to men in his department responsibilities in organization and teaching. Founders of schools differ widely in personality, but they have one thing in common. They attract men from far and near. Sometimes regarded as visionary, frequently highly imaginative, they impart to those about them an irresistible urge to seek knowledge for its own sake. The influence of such men is best indicated by a tribute paid by Johannes Müller to Rudolphi. It is as follows:

> Rudolphi was no less great as a man than as a scholar. Any one who knew him was bound to love and respect him, even though his frankness of speech might sometimes hurt a little; one could not long resist his charm. What above everything else he demanded of people was righteousness, honesty of mind and freedom from all unworthy motives. When he found these qualities he gave of himself without reserve, and never again allowed himself to be deceived by appearances. His real self finds expression in his poems, in which he often speaks of friendship. Whenever I recall his frank, cheerful, dignified features, his kindly seriousness, the energy and integrity of his character, I am deeply moved. In an ignoble mood I should avoid looking at the portrait of my fatherly counselor, and it is when I recall the noblest experiences of my life that I think at once of Rudolphi.

This is one of the finest tributes ever paid to a man. One must concede that it is the personal influence or the personality of a man that is the principal leaven in the development of a school. There are other contributing factors provided by the vision of the leaders. During the last fifty years few have equaled, none have surpassed, the German school of surgery. Langenbeck produced Esmarch, Billroth, and finally Kocher. The men to whom he gave the urge were placed in Germany, Austria, Holland, Serbia and Switzerland, and while only few knew him personally or were even in intimate relation with him, they were unconsciously influenced by his spirit and idealism handed down by other men.

ORGANIZATION

Besides personality, which is perhaps the most important, is organization. Early German surgery was distinctly influenced by the French school. Young German students journeyed to Paris to sit at the feet of Petit, Le Dran, Desault, Chopart, Dupuytren, Velpeau and Nelaton. For some reason the French school became less influential and stimulating, and the German school of surgery flourished. The spirit of teaching, investigation and cooperation which leads to the development of a school cannot be wooed with riches. Unexpectedly, often without any plausible explanation, she flees the favored spot and causes to burst into bloom sterile fields, out of which it has been steadfastly maintained that nothing good could come. She can be wooed only by arduous labor, self denial and idealism.

Organization is necessary in the development of a school. It has always seemed to me that in this country we have paid too much attention to the older men in the organization. The men in the surgical department who should have the greatest consideration and the fullest opportunity are the young men who, on graduation,

show an inclination combined with ability for surgery, surgical investigation and teaching. A young man in a department should be relieved as largely as possible of routine operating and the routine care of patients, having at least half of his day free for work in the experimental surgical laboratory or in the laboratories of anatomy, physiology and pathology, to which he should have free and easy access. He should have ample opportunity to progress in the system, so that each year responsibilities commensurate with his development may be given him. He should be paid a living wage. Universities at the present time are in sharp competition with private clinics, which are able to pay higher salaries and not infrequently have a large material. In some of these clinics, the men never reach the position they desire. The system easily becomes blocked. There are several factors which militate against the development of any great number of schools in this country. Owing to certain defects in our educational system, men enter professional schools at a relatively late age and of necessity graduate late in life. The graduate should enter at an early age the school in which he develops, for the early productive years of his life should be devoted to the specialty which he selects. The salaries which are paid are not sufficient to keep younger men in the organization any length of time. Professional success in this country at the present time is usually measured by financial returns rather than scientific achievements. Many of these young men are not imbued with the idea that only the poor shall enter the Kingdom of Heaven, that the rich man is already damned for being rich, that poverty is in itself a virtue and riches in themselves a vice. The advancement of surgery could be greatly aided by the establishment of fellowships in the surgical department, each endowed for $50,000, which would give to the appointee a living wage and some money for books and equipment.

SURGICAL EQUIPMENT

Teaching of surgery, stimulation of investigation, and the founding of a school of surgery should be the ambition of a surgical department. What is required in the way of surgical equipment?

It has been stated that fifty surgical beds with a large outpatient department should be sufficient, if the classes are limited to sixty. This statement was made fifty years ago and has been repeated from time to time since. It no longer holds good. The specialties have developed at an enormous rate. Neurosurgery, urology, otolaryngology, plastic, rectal and thoracic surgery, all require beds. Gallstones, ulcers of the stomach and duodenum and hypophysial and thyroid disorders now receive surgical consideration. Industrial surgery must also be recognized, for notwithstanding the safety devices which have been introduced, large numbers of persons are still injured and these must be returned to industry as quickly and with as little disability as possible. Even with 150 beds, which represents the minimum capacity, the turnover must be rapid to teach students disease and to permit them to observe throughout their courses disease and injuries.

The outpatient department is and will remain an exceedingly valuable aid in teaching. In 1924, practically all the teaching of fractures at Johns Hopkins was conducted in the outpatient department. The relation between the outpatient and inpatient departments must be extremely close. The liaison between the two must be perfect. This necessitates a reorganization or readjustment of most outpatient departments. I have the profoundest sympathy for the man in the outpatient department who year after year does the drudgery with little or no financial reward, frequently without promotion or preferment. The relation between the two departments should be so close that the man in the outpatient department keeps in touch with the patient after he enters the house; he should be notified of and witness the operation if such is performed, and have the patient returned to him after discharge from the hospital. A certain number of the 150 beds should be reserved for men in the outpatient department who have ideas and problems on which they want to work. Such an opportunity will stimulate teaching and raise to a much higher level instruction in the outpatient department, which is often killed by dull monotony.

The surgical clinic should be a unit capable of doing all its bacteriology, pathology, chemistry and special examinations. Such an organization conserves time and enables members of the staff to be in most intimate touch with the material. It is not infrequently stated that the surgeon is more or less of a mechanic. Perhaps this criticism is more or less justified at times. The grounds for such criticism should be removed. The surgeon should be a diagnostician, a pathologist and a bacteriologist, applying largely mechanical therapy. Every man on the staff should have a special training in pathology, and some time during his residence should serve a period in the laboratory, handling tissues and teaching students. This is a large order but is the ideal toward which every surgeon should strive. It is generally believed that a high wall is raised between ideals and reality, between art and handicraft—a wall whose foundations have been well laid but which crumbles bit by bit as soon as properly trained men with purpose and determination put it to the test.

While the unit organization is the one which we hope we may obtain, it should be understood that there should be the closest cooperation with the other departments. The welfare of the institution should always be uppermost, and the fate of an institution is settled when cooperation between departments ceases to exist.

An increased bed capacity is already needed. We are losing cases because we have no beds. It is bad business medically to turn patients constantly to other hospitals, as it is bad business commercially to refer purchasers to other stores. A channel is worn. It may be difficult to reverse or divert the stream.

PRESENT TENDENCIES AND PROBLEMS

Certain things are proposed from time to time which embarrass or interfere with the plans of those who have to do with the teaching of medical students. The tendency of state boards of examiners at the present time is to require a fixed inelastic curriculum which necessitates spoon feeding by instructors. The student must have taken a certain number of hours in a subject before he can appear before the examining board. In some instances different associations of medical colleges have attempted to make an ideal curriculum with the introduction of a certain number of required hours in the different subjects. On numerous occasions, I have attended meetings in which the curriculum has been discussed, and I have often wondered what impression such a discussion would make on a prospective student or a student in the first years of medicine. Each teacher seems to think that his department is of prime importance, forming the foundation of medical education, and

the main difficulty seems to be to find hours enough in the day or a reasonable number of years to satisfy each department. Attendance at such a meeting readily convinces me that we think in terms of departments rather than in terms of the institution.

Difficulties are now arising as to the type of internship that a recent graduate should serve. A man may take a year in medicine, then a year in surgery, or vice versa, or he may take a year in pathology and then a year in medicine or surgery. If a student is to go into surgery, a year can be spent to great advantage in either medicine or pathology, and a man looking forward to a career in surgery should always have such a preparation. Such an internship gives the man an opportunity to do one thing well. If the habit of doing a thing well is acquired, there is no need to worry. The ordinary rotation service tends to superficiality. In certain states in which a fifth or intern year is required before the candidate can appear before the examining board, a rotating intern service is required. This is the age of standardization. All are made to run in the same groove. Individuality is suppressed in a country which prides itself on a democratic form of government The system of medical education and licensure is probably the most autocratic in the world. There is a tendency to fabricate the medical student on the plans of a Ford. In discouraging some of these tendencies, the alumni of a school can exercise a corrective and lasting influence.

There has been much discussion concerning the so-called full-time system. I have accepted two such positions and must therefore believe in it. There are, however, some dangers in it which must be avoided, if it is to serve its purpose. Even its most ardent advocates admit that at the present time it would not be desirable to place the entire staff on this basis, even if money were available to do so. I have considered this plan carefully, and at one time was requested to make a budget, having this in view. The minimum budget for a surgical department in which the entire staff was on full time was $100,000, the income from $2,000,000. It would be difficult to secure such an endowment for a single department. More money would soon be required to keep the department at maximum efficiency. In addition, money would be required to maintain free beds for such a department. To justify such an expenditure there would have to be an enormous return in productive scholarship, and exceptional surgeons and teachers would have to be developed in relatively large numbers. The most serious difficulty with the system is the possibility that those engaged in it may become cloistered and sequestered, and that private material, which not infrequently is the best material for teaching and investigation, may be reduced in amount.

No medical department or institution can divorce itself from the community in which it is located, or from the practicing profession. From time to time any institution has to indicate that it is an integral part of the community. The medical school and hospital can do this better than any other part of the university. A man may make a great contribution to electrical science or physics by which all are greatly benefited, but medical care is something more personal. The physician and surgeon are relied on when things are blackest and genuine comfort needed. In no profession that I know of are the personal relations so close as between the family and physician. If I needed a surgeon, I would think that I was entitled to the best, and I would certainly lose my interest rapidly in any institution which made it impossible for me to have the services of that man. The surgeon must control his time, but he should give the impression that he is willing to render service when called on.

I have read, as probably all of you have, Cushing's remarkable book "The Life of Sir William Osler." One cannot help being struck by the interest that he maintained in people in his community, in the members of the medical profession with whom he liked so to associate, and in medical societies. These associations were of mutual benefit. He directed the profession along better lines. He furnished the driving power so often needed, and, in turn, these organizations kept him in contact with the best and stimulated him to increased endeavor. His full life speaks more than words for the necessity of many contacts. The busy man is apt to be the productive man.

If the full-time man does not see private patients, he will lose material which may prove most valuable for teaching and investigation. In many charity hospitals, the material, while large, may be limited to definite groups of cases. It has always seemed to me that there is a greater diversity of disease among private patients, many diseases, in fact, which the graduate will see on entering practice. These patients also give the most intelligent cooperation, and are therefore most satisfactory in the investigation of disease. It has been my experience that private patients rarely, if ever, refuse to be shown in a clinic or to a small group of students. The possibility of the reduction in this material or its possible complete elimination should be seriously considered. The loss of such material might interfere materially with the education of the physician.

In the New York *Herald Tribune* there recently appeared an editorial headed "Art as a Healing Art." The first sentence of the editorial was as follows:

> When the Virchow Hospital in Berlin was erected, some one had the wit to suggest as a legend to go over the entrance, In treating the patient do not forget that he is a man.

Brewers' Yeast as Supplement to Deficient Diet.—In the course of an investigation on the influence of dietary deficiencies on experimental tuberculosis in the albino rat, it was noted by M. I. Smith and F. G. Hendrick that a diet composed of 40 per cent rolled oats (6 per cent protein) plus 10 per cent purified casein supplemented with fat soluble A and inorganic salts failed to produce normal growth, such as is obtained when the rat is maintained on a synthetic diet of from 16 to 18 per cent of purified casein supplemented with fat soluble A, inorganic salts, and vitamin B. The addition of from 5 to 6 per cent of dried brewers' yeast to the oat ration produced a normal growth curve, irrespective of whether the ration contained casein, gelatin or neither. It is clear, therefore, that dried brewers' yeast satisfactorily supplements the oat kernel. Though the oat kernel is known to contain liberal amounts of vitamin B, the possibility suggested itself that the level at which oats were fed might not furnish this vitamin in adequate amounts. To test this possibility, a quantity of dried brewers' yeast was autoclaved for six hours at 15 pounds pressure, which procedure completely destroyed its vitamin B content, and this material was fed to rats. The results demonstrate that autoclaving brewers' yeast, though destroying its vitamin B content, does not impair its efficacy in supplementing the oat deficiency. The oat kernel is therefore not deficient in vitamin B, but is deficient in some other factor, a factor that is present in brewers' yeast and withstands prolonged autoclaving. Evidence is advanced to show that a synthetic ration with casein as the sole source of protein must be supplemented with this unrecognized factor present in yeast, besides vitamin B, in order to make it adequate.—*Pub. Health Rep.* **41**:201 (Feb. 5) 1926.

SAVING TIME IN THE MEDICAL SCHOOL*

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With the introduction into premedical and medical courses of those subjects requisite for a proper understanding of modern medicine, there has been a prolongation of the training period for the degree of Doctor of Medicine to a point that is approaching the upper limit of reasonable requirement.

As physics and chemistry were introduced into the premedical curriculum, and experimental physiology, laboratory bacteriology and practical pathology found their way into the day to day work of the medical school, the necessary clinical training was pushed forward. This, based on the traditional and ridiculous "four-system" of American education, meant four years of high school, four years of college, and four years of medical school. When additional training of a practical sort was added to this, the medical student before he actually met the problems of practice had passed out of the stage when it is easy to train his senses and his social accommodations.

The result of this carried to the extreme, as it has been in some of our institutions, was to develop practitioners who seemed (at least to many active practicing clinicians) comparatively ineffective and who required too much machinery for the practice of medicine.

With the two-year college requirement, four-year medical course and the one year of intern, there has been an approximation to a more reasonable period of time consumption. This has been viewed as somewhat at the expense of proper scientific and broad general training by many of those who have most carefully thought over the whole field of scientific education with medicine viewed as a portion of that field.

It has become, I think, quite clear to all that there is no possibility of making a pathologist, physiologist, anatomist, bacteriologist, biochemist and pharmacologist out of every prospective medical student, and that it is just as impossible to turn out a radiologist, urologist, rhinologist, laryngologist, otologist, orthopedist and pediatrician in the later clinical work in the medical school. It has become clear to most medical teachers that a careful selection is necessary in order to provide broad general training, sound scientific training and adequate clinical training during the period from the late teens through the early twenties in the development of physicians. Careful selection in the fundamental fields, together with the elimination of the specialties, will give sufficient training time to turn out a well rounded general practitioner, if that becomes the program of the American medical school. It seems to me, then, that the first thing is to choose the training of a general practitioner as the goal of the regular medical course, and then with great care to select the subjects that are requisite; and, second, to choose with even greater attention the methods of handling those subjects, the amount of time to be given to each of them, and to insist on practical clinical training during the period when this is most possible to the young physician.

To begin with, it is going to be necessary to eliminate so far as is possible many of the traditional absurdities of the medical curriculum, and also many of the methods, including an abnormal number of lectures, certain sequences in training, and that sort of thing. With proper coordination by the various instructors, there is no reason why there should be the endless repetition to which the present medical student is subjected, leading him to lack of interest and preventing many students from obtaining that concentration and thoroughness which will mean so much all through later life. We should strive particularly for such concentration and thoroughness, rather than assist in that diffusion and dissipation of energies which is inevitable with repetition. Why should the medical student be told the same thing a dozen times by as many instructors? Why not stop *teaching* him, and let him get most of his information for himself after one or two exposures? Less time in the lecture room and more time in the library, at the desk, at the bedside, and in the clinic, will lead to that self-training which sooner or later every practitioner must obtain. The lecture system, together with the antique examination plans now in general adoption, leads to periods of hectic work, physical and mental exhaustion, and unnecessarily long vacations.

A proper use of the calendar year with short vacations and a reasonable study list should give the medical student a life of only moderate strain, similar to that which he will experience afterward, and with better results in his training. The long summer vacation has no reasonable educational or physical excuse; there may be an economic necessity for it in the case of those students who need to assist themselves financially. The organization of the medical course on a four-quarter basis, leaving one month, say September, in the year free and with vacation periods of a week at Christmas and at Easter, it seems to me, is an ideal plan. In this way it is readily possible to do the present four-year course in three. This provides ample time for that acquaintance with the long list of terms which every medical student must know, and which is one of the most difficult problems of the student. A proper mixture of work in the outpatient clinic, laboratory, hospital and library can be so arranged that an adequate amount of training can be offered without difficulty. If an institution is so deeply embedded in its own traditional methods (as many seem to be) that it cannot free itself, it is possible for the summer vacation period to be used for clinical and laboratory assignment of one sort or another with proper credit, thus reducing calendar time consumption.

If the quarter system is used for both the college period and for the medical school, five calendar years should without difficulty give all the work that is now obtained in the two-year college course and the four-year medical course, together with a portion of the intern year. Under this system, students who need to support themselves can drop out for a quarter or more at any time, and return when their finances are rehabilitated. Graduation is possible at the end of any quarter, so that there is no needless loss in time. In other words, by these methods we can in a shorter period of time give to medical students just as good, if not better, training, with less speed, fewer spurts, less talk by the teachers, more study and self-training by the students, and with better care of the mind and body.

Is it not about time to break down the rigid honeycomb of old procedures, which is getting so thickened that we often have more wax than honey? Is it not about time to look at the training of the physician as a new problem to be achieved in new ways? If we can get some of the arteriosclerosis out of medical education we can produce better physicians in shorter time with the same facilities.

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SELECTING A HOSPITAL FOR AN INTERNSHIP

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In recent years there has been an increased insistence on an internship in a hospital, subsequent to the completion of the course in the medical school, as a prerequisite to the practice of medicine in any form. Some states have made this a requirement for admission to examination for registration for practice. Medical schools are coming to a very general recognition of the internship as part of the plan of education of the medical student, and whether they award their degree of doctor of medicine before or after the completion of the internship, the medical curriculum is planned on the assumption that the internship will be taken to round out the student's medical course, and that, without it, he will have had an incomplete preparation to begin the practice of medicine. In other words, the internship is recognized as having a definite educational value; to be satisfactory for the student who has just completed his medical curriculum, it must have such a value.

With this requirement in view, what ways and means has the senior student for the selection of a hospital internship satisfactory to his need? In the first place, it must be recognized that a hospital may be adequate for its work in the efficient care of its patients and yet be quite unsuited for an internship that is to complete the medical school education of the student. In other words, a hospital can perfectly well be a class A institution as a hospital for the care of patients and at the same time be about class D for an educational internship. This applies particularly to special hospitals. However, the converse is not true; no hospital classed below A as a hospital can be considered a satisfactory place for an internship. In other words, no hospital in which patients do not receive excellent professional and institutional service is acceptable for an internship. The educational internship should be limited to class A hospitals, using the classification of the American Medical Association as a basis of grouping; this serves as a reasonably satisfactory index of a satisfactory care of patients, but it must be recognized that classification as an A hospital in itself does not indicate that the hospital is satisfactory for an internship.

As it is the educational value of the hospital that is the important criterion to the prospective intern, certain general conditions must be fulfilled. In the hospital, the intern should expect to learn how to apply to the individual patient the more theoretical knowledge acquired in the medical school and by repetition, with methods of check as to accuracy, perfect himself in the methods of his profession, the methods of both diagnosis and treatment, along with the acquirement of that somewhat intangible but no less important art, which, for a better term, we may call the understanding of the human relationships of patients. There must be in the hospital patients in sufficient numbers to keep the intern occupied, and yet not so many that he has insufficient time to study each one with care. The diseases of the patients must be sufficiently varied to give the opportunity to apply a major portion of the usual methods of diagnosis and treatment. The apparatus, including an adequate laboratory equipment to carry out these methods, must be available for the use of the intern.

It is the general idea, rather than the detailed form, of the foregoing that is important. Deficiency in number of patients may be offset by other features. Excess of patients may be made less of a disadvantage by highly organized methods of handling them. In general terms, in a graded internship,[1] twenty-five beds under the care of one intern during his period of responsible charge of patients may be regarded as a minium and fifty as a maximum for the educational purposes of an internship, but it should be remembered that in mere numbers there is no desideratum of desirability, and under special circumstances either less or more may provide entirely adequate educational opportunity.

The range of diseases of patients needed is rather more difficult to express in any definite or numerical way. A general medical service of the size already indicated, to which patients are admitted so as to include those likely later to need surgical therapeutics, will furnish an adequate range of diseases. A surgical service in which all the usual procedures of diagnosis are carried out will provide this range equally well. Just how far there is need in such an internship for the special services, such as pediatrics or obstetrics, is a question of considerable debate at present. It seems to me that its proper answer must hinge on what is to be the future work of the medical student and what are the opportunities within the medical school for practical work in these several branches. On these factors depend the educational value of the mixed service. This service, which on theoretical grounds is desirable, at once becomes undesirable if the period in each division is too much shortened. It has seemed to me that an internship as short as twelve months probably is inadequate in time unless it is an unmixed service in medicine for the man proposing to go ahead with a special service, and that any form of mixed service should be eighteen months in length as a minimum and longer if it includes any of the very special services. It should be noted that these are minimal lengths of service and not expressions of length of an ideal service. However, let me reiterate that it is not the form and the length but the quality of the service that is the important requirement, and it would be unfortunate for regulating bodies to attempt to express as requirements minimal or maximal numbers of beds and numbers of months of service or types of service except in the most general terms; it would be still more unfortunate to say, for example, that a mixed service alone will provide the educational opportunity to be regarded as a required part of the training of the medical student.

Hospital equipment and laboratory facilities hardly need definition in this paper. As far as they are concerned, in general, any class A hospital providing the other things discussed may be regarded as entirely adequate for the purposes of an acceptable internship. It may be added, however, that the intern must be required to do for himself the ordinary laboratory procedures of diagnosis without being expected to do the more complicated ones, which he is entirely unlikely to carry out for himself in future years as part of his own practice of medicine.

The first paragraph of this paper ended with the idea that the internship, to be satisfactory, must have a definite educational value. Herein lies the crux of the situation; all else discussed up to this point is merely machinery to an end. For "a definite educational value" there must be instruction and guidance. The men of

1. In a graded internship, the intern rotates from one type of medical work to another. A frequent arrangement is for him to serve a certain number of months in clinical laboratory work, then as junior aiding the senior in charge of patients, and finally as senior. Consequently, in his period as senior in responsible charge of patients, each intern is aided by two other interns.

the staff are more important than the equipment of the hospital and the number and type of patients. They must be willing to instruct the interns; they must be willing to spend time in the hospital engaged with the interns in the study of patients; they must be well trained themselves, and they must know how to teach.

It is of these phases of hospital work that it is most difficult for the prospective intern to obtain information. The annual report of the hospital gives the number of beds, number of patients treated and the names of the staff members. Often the annual report gives, in the form of tables of diagnoses, an idea of the range and type of diseases encountered. If the prospective intern knows the names of the staff, the American Medical Directory will give him a little idea of the qualifications of each, such as school and date of graduation and membership in societies. This, however, is meager and may be misleading. As to time spent in the hospital by members of the staff and their teaching ability, a visit to the institution or a talk with present or recent interns will help.

Looking about for any other criteria, it has seemed to me that the number of necropsies obtained on patients dying in the hospital is perhaps the best single index of the professional efficiency of the hospital, of the amount of work devoted to the study of patients by members of the staff, of the eagerness of the staff to learn, and its teaching abilities. In my opinion the physician who has studied his patient conscientiously and has watched the progression of his disease from day to day, who has discussed the disease and its manifestations in the patient with his interns, and who is sincerely desirous of learning more of medicine is the physician who makes every effort to secure permission for necropsy in all fatal cases and is keenly interested in what is found. When such men make up the staff of any hospital necropsy permits are sought on all fatal cases and obtained on a goodly number; and hence the percentage of necropsies obtained in any hospital forms a very good index of the professional efficiency of the institution and the desirability of that hospital as a place of an internship.

In a statement published last year in the paper of the Phi Rho Sigma medical fraternity, I gave the advice that any general hospital having more than fifty deaths per annum, in which the necropsies were 25 per cent or more of the number of deaths, might be regarded as a desirable place for an internship. I now think that 100 deaths per annum is a better standard to adopt, as the smaller number of deaths would include many hospitals hardly large enough to provide thoroughly satisfactory internships. With this idea, I have arranged a number of general hospitals with 100 or more deaths a year in a series based on the percentage of necropsies to the number of deaths, the institution with the highest percentage being at the top and the one with the lowest at the bottom, as shown in the accompanying table. This list comprises the Mayo Clinic and the larger hospitals of Chicago (data for Chicago obtained through Dr. Irons from a report of the committee on necropsies in the hospitals of Chicago to the governors of the Institute of Medicine), Boston, New York, Philadelphia, and Baltimore (data for these cities obtained by letter from the individual hospitals). The data are not always of the same year, and the list is far from complete. In general the figures apply to all deaths in the hospital except such as are referred to the coroner or medicolegal examiner; medicolegal necropsies are not included. In most instances, deaths and necropsy percentage include both private and ward patients. This is the case for all hospitals having 25 per cent or more of permission necropsies, except Mount Sinai Hospital; there the assistant director states that they are unable to supply information in regard to private ward patients; letters from the other hospitals with more than 25 per cent of necropsies state that private patients are included in the figures given. Private patients are included in the statistics of all the Chicago hospitals except the Cook County Hospital. Allowing for possible variations in the method of gathering the figures from different hospitals, the table is still a reasonably fair grouping of the institutions on the basis of percentage of necropsies per annum, and I think it shows the value of this as an index of the quality of the work of the institutions, though of course there can be considerable difference of opinion as to the proper comparative ranking of individual institutions.

Percentage of Necropsies to Number of Deaths in General Hospitals with One Hundred or More Deaths a Year

Name of Hospital	Date of Statistics	Number of Deaths	Necropsy Percentage*
Mayo Clinic, Rochester, Minn.	1925	625	86+
Johns Hopkins Hospital, Baltimore	1924	683	84+
St. Agnes Hospital, Baltimore	1925	135	80
Peter Bent Brigham Hospital, Boston	1925	289	69+
Presbyterian Hospital, Chicago	1924	314	67+
Mount Sinai Hospital, New York	1925	589†	61+
Pennsylvania Hospital, Philadelphia	1925	434	50+
Michael Reese Hospital, Chicago	1924	384	40+
Presbyterian Hospital, New York	1925	299	39+
Jefferson Hospital, Philadelphia	1925	450	38+
Philadelphia General Hospital, Philadelphia	1925	2,577	37+
Lankenau Hospital, Philadelphia	1925	253	37+
New York Hospital, New York	1925	406	36+
Massachusetts Homeopathic Hospital, Boston	1925	321	35+
St. Luke's Hospital, Philadelphia	1925	435	34+
Massachusetts General Hospital, Boston	1925	431	32+
Presbyterian Hospital, Philadelphia	1925	230	32+
Illinois Central Hospital, Chicago	1924	121	31+
St. Joseph's Hospital, Chicago	1924	153	28+
St. Luke's Hospital, Chicago	1924	263	26+
Mount Sinai Hospital, Philadelphia	1925	201	25+
Lenox Hill Hospital, New York	1925	364	24+
University Hospital, Baltimore	1925	281	23+
Post-Graduate Hospital, New York	1925	415	23+
New England Deaconess Hospital, Boston	1925	114	21+
Protestant Episcopal Hospital, Philadelphia	1925	484	20+
Bellevue Hospital, New York	1925	2,824	20+
Roosevelt Hospital, New York	1925	463	19+
Lincoln Hospital, New York	1925	581	19+
Norwegian-American Hospital, Chicago	1924	162	18+
Cook County Hospital, Chicago	1924	4,024‡	17+
Swedish Covenant Hospital, Chicago	1924	154	16+
Boston City Hospital, Boston	1925	1,270	15+
Augustana Hospital, Chicago	1924	218	12+
Hebrew Hospital, Baltimore	1925	200	12+
Union Memorial Hospital, Baltimore	1925	135	12+
Harlem Hospital, New York	1925	1,186	12+
Wesley Memorial Hospital, Chicago	1924	207	12+
Hahnemann Hospital, Philadelphia	1925	491	9+
St. Mark's Hospital, New York	1925	155	9+
Grant Hospital, Chicago	1925	135	8+
Fifth Avenue Hospital, New York	1925	204	8+
American Hospital, Chicago	1924	152	8+
St. Anne's Hospital, Chicago	1924	126	6+
Mercy Hospital, Chicago	1924	242	5+
St. Vincent's Hospital, New York	1925	363	5+
Frances Willard Hospital, Chicago	1924	130	5+
Methodist Episcopal Hospital, Philadelphia	1925	246	5+
John B. Murphy Hospital, Chicago	1924	146	4+
St. Elizabeth's Hospital, Chicago	1924	209	3+
St. Mary of Nazareth Hospital, Chicago	1924	285	2+
St. Elizabeth's Hospital, Boston	1925	163	1+
Carney Hospital, Boston	1925	219	0.5+

* Percentage on which permission for necropsy was obtained.
† Private wards not included, as the hospital administration does not have information with regard to necropsies on private patients. Without these, the comparative ranking for this hospital probably is too high.
‡ Charity wards only.

While there may be exceptions as to hospitals with smaller percentage of necropsies, I know of no exceptions as to desirability when the percentage is 25 or higher, and in general the higher the percentage of necropsies, the more suitable is the hospital for an internship. In my judgment, the hospital that has few necropsies is a hospital in which the staff lacks many qualities that go to make up the best type of medical

man; often the staff lacks the courage to have a showdown of its diagnostic ability, a form of cowardice hardly consistent with the highest ethics and a real desire for progress. Most important is the fact that, without necropsies, the physician in charge of the case fails to realize his diagnostic deficiencies; he probably has ceased to progress in his medical knowledge and may even have retrogressed. There can be no poorer leader and teacher than he who no longer recognizes his limitations.

In giving 25 per cent of fatal cases coming to necropsy as a criterion of desirability of a hospital for an internship, I believe a very serviceable criterion of efficiency has been set, and hospitals should strive to maintain this level as a means of valuable postgraduate education for their staff as well as for their interns. Why should not this standard be set by the American Medical Association as an additional criterion of acceptability for an internship?

It is not amiss, perhaps, to point out that in hospitals with numerous Jewish patients there is encountered constantly the excuse that the Jewish religion has tenets opposed to the necropsy; certainly, that has been our experience in Boston. In the *American Israelite* for Nov. 19, 1925, will be found a full discussion of this topic, based on a study of the Talmud and rabbinic opinion, which it would be well for all Jewish physicians to read. From this, it seems clear that there is no authority or tenet of the Jewish faith opposed to the necropsy. Yet in a list of twenty Jewish hospitals, in 1923, there were only five in which the percentage of necropsies obtained on Jewish patients exceeded 25 per cent of the deaths, and in seven there were no necropsies at all. An active campaign of education on the part of Jewish physicians among Jewish people would do much to correct this situation. In other sectarian hospitals conditions are very similar, and many nonsectarian hospitals are no better. If my criterion of desirability of a hospital for an internship should receive general acceptance by the senior students of the better medical schools of the land, these hospitals with few necropsies would soon find themselves having great difficulty in securing good interns. It would seem to me that, if hospitals with a poor record in regard to necropsies expect to attract high grade men as interns, they should make strenuous efforts to increase the number of necropsies obtained on patients dying within or soon after discharge from the hospital. I may add that whenever such an effort is made, a goodly number of necropsy permissions is the result.

Some hospitals pay interns a stipend of some form. This should arouse in the mind of the prospective intern a strong suspicion of the inadequacy in educational value of the internship. I do not mean by this that there is anything reprehensible in payments to an intern; but knowing as I do the efforts at economy required on the part of all hospitals, I know that they do not pay salaries for service obtainable without salary, and that payment of salary is an indication that they do not offer enough of educational value in their internship to attract interns, and so they must add a monetary attraction in order to get them. The student without means may be forced to take a salaried internship, but he should realize that he is probably getting one of a depreciated educational value. It has always seemed to me that the salaried hospital resident job should be taken by the man who has completed his medical curriculum, which today means the completion of a medical school course of study plus an internship. To me there seems no more occasion to pay a salary in an educational internship than to pay a salary to the medical student during his course in the medical school.

Perhaps many of my views will meet with disapproval. They are merely the opinions of one who is greatly interested in the hospital training of interns. If they stir up a discussion that will enhance the educational value of the internship in this country, they will have accomplished all that I can ask for them. Whether my suggestions prevail or not is of little importance, provided their intent is attained—a better internship available to every graduate from our medical schools.

MEDICAL EDUCATION AND MEDICAL SERVICE

SOME FURTHER FACTS AND CONSIDERATIONS

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I have presented in previous papers [1] a large amount of evidence of difficulty and breakdowns of medical service, especially in rural districts. Rural medical service, however, has not generally broken down and when attention is called to the actual shortage in some locations, and the impending shortage everywhere, it is often assumed that a sufficient answer is that there are plenty of doctors in the country. Assuming that this is true, the serious fact is that the rural doctors are disappearing.

THE AVERAGE AGE OF RURAL PHYSICIANS

The conclusive evidence of this is the high average age of rural physicians. Several men in various parts of the country have called attention to this fact in their respective states. Following this hint I have in the last six months undertaken to investigate the age of rural physicians throughout the United States. The investigation was conducted as follows:

I wrote to the secretary of each state medical society the following letter:

> I wish to send a request, asking the names and locations of all of the physicians in his county, to a representative physician, who would probably give me a careful answer, in each of several rural counties of your state.
>
> Would you do me the favor to give the names of ten to fifteen such men with their addresses in various counties of the state which would be fairly representative of conditions of rural medical service. For my purpose I regard counties that have no town above 5,000 as rural.

In states with few counties, a smaller number was asked for.

It should be noted that I asked for counties which would be fairly representative of conditions of rural medical service, not those where service was worst.

Also it should be noted that I have assumed as a standard of rural communities counties that have no town of more than 5,000 inhabitants, while the census standard of rural communities is one having a population of 2,500 or less.

I received replies from forty-one of the forty-eight secretaries. The forty-one states heard from are shown in the accompanying table.

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1. Pusey, W. A.: Medical Education and Medical Service, J. A. M. A. **84**: 281 (Jan. 24), 592 (Feb. 21) 1925.

I then addressed to the physicians in each state suggested by the state secretary a letter asking the names and locations of all the physicians in his county.

This letter was sent to 366 doctors in 366 counties in the United States, and replies were received from 283 counties in forty-one states (77.3 per cent).

My investigation thus covers 283 counties in forty-one states; i. e., 6.9 counties per state. Some states show a return from a few counties because they have few counties or few rural counties. Taken as a whole, I think one could hardly get a more accurate cross-section of medical service in average rural counties in the United States.

These returns from each county reporting were then checked with the latest directory of the American Medical Association. The age of each physician and the number of years he had been in practice were also determined from the directory. All of the statistical work was done by my secretary, Mr. J. Q. Gowland, an experienced statistician.

Results of Investigation

State	No. of Counties Examined	Total Number of Doctors	No. of Graduates Last 10 Yrs.	Counties no graduates Last 10 Yrs.	Average Age	Average Time Practicing	High Age	Low Age
Alabama	7	92	8	2	51.3	25.7	56.9	45
Arizona	5	49	4	3	51.9	25.1	56.4	50.4
Arkansas	7	113	3	5	54	24	59	52
California	12	156	18	4	52	24.3	61.7	46.1
Colorado	6	104	9	1	51.7	24	53.5	47.7
Connecticut	4	89	7	..	53	27	54.8	51.4
Delaware	1	32	2	..	57.2	29	....	....
Florida	6	53	4	3	47.6	20.5	58.5	43.5
Georgia	6	70	7	2	51.8	24	53.6	45.7
Illinois	7	208	25	1	52.4	24.7	57	48.6
Indiana	8	134	9	3	53.7	25.5	61.9	49.7
Iowa	8	143	13	3	53	25.7	59.7	49.3
Kansas	5	59	7	1	51.9	24.7	54.4	49.2
Kentucky	6	89	1 (col.)	5	56.2	29.8	59.3	54.8
Louisiana	9	160	13	1	50.5	25.3	53.7	48.5
Maine	4	115	18	..	53	25.8	59.5	50.2
Maryland	6	128	8	2	53.8	28.2	55.4	47.2
Michigan	6	71	9	1	52.7	25.1	55.2	47.2
Minnesota	9	87	13	1	48.9	21.6	56.3	43.2
Mississippi	6	95	6	2	51.8	24.6	55.4	47.9
Missouri	11	135	6	5	55.7	29	61.3	51.7
Montana	3	20	0	3	51	23.2	52.9	46.2
Nebraska	5	80	13	1	48.8	22.2	50.4	45
Nevada	5	31	1	4	53	24	57.7	44.7
New Jersey	7	186	18	1	52.8	28	60.5	48
New Hampshire	3	90	11	..	52.9	26.4	55.8	50
New Mexico	5	33	0	5	56	27	61.6	52
New York	7	237	25	1	53	26.4	58.4	48
North Carolina	6	67	12	2	47.6	20.1	50.3	42.5
Ohio	9	174	13	2	54.6	29	59	53
Oregon	10	96	13	5	48.8	21.2	57.7	46.8
Pennsylvania	18	403	25	5	54.1	27.6	58	48.4
South Carolina	7	106	12	2	50.1	24.2	53.4	44.4
South Dakota	6	32	5	3	47.8	19.2	51	43.7
Tennessee	9	183	5	4	54.9	27.9	59	49.3
Texas	6	87	7	3	53.8	27.6	59.2	51.2
Utah	5	35	11	3	46	17.6	50.1	43
Virginia	11	123	7	5	50.9	25.3	58.5	45.9
West Virginia	6	57	3	5	54.4	26.6	57	48
Wisconsin	11	153	23	..	49.5	22.5	53.5	44
Wyoming	5	38	5	1	48.8	22.1	54.5	45.3
Total	283	...	398	100				
Average age					52 yrs.			
Average time practicing						26 yrs.		

The table given herewith shows in detail the results of this investigation. The outstanding facts of it are as follows:

The average age of physicians in 283 rural counties in forty-one states in the United States is 52 years.

The average time in practice is twenty-six years.

In these 283 counties there are only 398 physicians who are graduates of the last ten years; i. e., 1.4 physicians to the county.

In 100 of these 283 counties (35 per cent), no graduate of the last ten years has gone into practice.

The significant broad facts are that in 283 representative rural counties all over the United States the average age is 52 years, and only 1.4 graduates of the last ten years have settled in each of these counties.

This, it may be confidently assumed, represents the age situation of the men who are furnishing the medical service to the rural population of the United States. The life expectancy of men of average health of 52 years is not much more than ten years (the life expectancy of selected insurance risks of 52 years is only 19.4 years). Certainly their average expectancy of service can hardly be ten years. This means that by 1935, if the present conditions are continued, there will be an utter breakdown of rural medical service.

The findings as respects graduates of the last ten years are even more significant. Of such graduates, 398 have settled in 283 counties. That is 1.4 to the county. If they should continue to go to these counties during the next ten years at the rate at which they have gone during the last ten years, if none of them die and none of them remove or discontinue practice, the total number of doctors in these counties will be 796, or 2.8 doctors to the county. There is now a total of 4,410 doctors in these 283 counties, or 15.5 per county.

Not a single doctor of the last ten years has gone into 100 of these counties. That means that 39 per cent of rural counties are facing a breakdown of medical service.

There will undoubtedly be an effort to minimize the significance of this high average age finding, but it cannot be successfully done. A large group of men averaging 52 years old is approaching the end of its usefulness. The findings cannot be minimized on the ground that they are not comprehensive. They are not figures based on a few unfavorable counties. Care was taken to select representative counties. They cover the entire United States and represent a study of the ages of 4,410 rural physicians. No more can the findings in regard to graduates of the last ten years, in these districts, be minimized. One and four-tenths doctors for each of 283 counties in forty-one states is a record of failure to supply adequate rural medical service.

The evidence brought out in this investigation is exactly in line with that brought out in my previous investigations, with that of the Committee on Medical Service of the Conference of State and Provincial Health Authorities, in 1923, to which I referred in detail in my previous papers, and with the other evidence which has been produced by many other students of the subject.

All of this evidence leaves cold most of those who are interested in medical education as such. They repeat in one form or another the statements that it is social and economic conditions that will have to be changed; that new arrangements will have to be made to supply many places with doctors—actually meaning, with the sort of doctors we are now producing—ignoring the fact that these same places formerly were able to have doctors.

OUR SUGGESTIONS FOR RELIEF

More and more we are suggesting state medicine or the socialization of medicine in one form or another as the solution of the difficulties. This is the sugges-

tion of Mayer and Harrison of the General Education Board. Dr. E. P. Lyons, dean of the medical department of the University of Minnesota, at the Conference on Medical Education, 1925, said in substance, "Suppose we do get socialization of medicine, what of it? I am a state employee and I find that status satisfactory." One of the great objections to socialism is that employees find the status satisfactory. The socialization of medicine would mean that the medical profession would be in the position of the public school teachers.

Our policy is also recognized in many quarters as leading to the disappearance of the general practitioner. Sometimes his disappearance is advocated. Dr. James B. Herrick recently has taken the position that the general practitioner is to disappear and should disappear.

The vague hope that quiets most men who are concerned about the situation is that we are actually producing enough doctors and perhaps some day they will be crowded out of the cities and specialties into practice where they are needed. Even if we are producing enough doctors, I believe that consideration will show—as I have attempted to show—that the crowding-out theory will not be effective in helping distribution to any practical extent.

ARE WE PRODUCING ENOUGH DOCTORS?

But are we producing enough doctors to hope for any action from this crowding out theory? Until recently I have accepted the contention as correct that we were producing all the doctors that were needed, that the difficulty was one of distribution. Recently doubts on this point have arisen in my mind. Particularly facts called to my attention by F. C. Waite, professor of histology and embryology at Western Reserve University have raised this question. The chief disconcerting fact which has come to my attention arises from an analysis of the Ohio situation, on the basis of Professor Waite's study of it.

After surveying the needs of the Cleveland district—that is, the district within 100 miles of Cleveland—Professor Waite estimates that that district will need 222 physicians annually to maintain the present ratio of physicians to population, without making any allowance for retirement before death. The present ratio of physicians to population in this area is 1 to 700+.[2] Western Reserve is graduating annually less than forty physicians. About 72 per cent of these, say thirty men, settle in the Cleveland district. That is, Western Reserve is furnishing the Cleveland district thirty physicians annually, when the annual needs of the district are 222 physicians. Where are the 190 to come from? Ohio has two other class A schools, one in Columbus and one in Cincinnati. These graduated, in 1925, 154 men. It also has a class B school in Cincinnati, an eclectic school, which graduated thirty-eight. Including these eclectic class B graduates, the total number of graduates, except those of Western Reserve, which we have already provided for in this estimate, amounted to 192. That is, if Professor Waite's estimate is correct, the Ohio schools are now graduating just enough men, including sectarian graduates, to take care of the Cleveland district! That district contains 51 per cent of the population of the state, and 38.43 per cent of the total area. If this estimate is correct, the Ohio schools then are graduating from all of their schools only half the number of physicians that the state needs annually. If all of the graduates of the state went to this Cleveland area, it would only take care of its needs, and leave 48 per cent of the population and 61 per cent of the area of the state unprovided for.

THE ACTUAL NUMBER OF PRODUCING SCHOOLS

I would call attention to the fact that the actual number of producing schools is less than a casual reader is apt to discover. The schools have been reduced from 160 to eighty, but of these eighty schools we have only seventy that are producing physicians. Ten of the eighty are class B schools; that leaves only seventy schools that we regard as satisfactory. But of these, and this is the pertinent fact new to me, ten of them—all class A schools—conduct only the first two years of instruction. (Next year this number will be reduced to nine.) They are only part medical schools and they do not produce a single graduate. In other words, from 160 medical schools we are now reduced to seventy producing medical schools of all sorts—44 per cent of our former number—and only sixty class A producing schools.

Also the number of students which these schools will take has been often sharply restricted to far below their former number.

When one considers this fact and remembers that we have only 44 per cent of the producing schools that we had twenty years ago, with a population of 115 millions against about 85 millions then, he finds explanation for the inadequacy of the medical schools of the country to take care of their applicants.

And yet Ohio is one of the richest and most prosperous states and one of the best supplied with medical schools. It has four medical schools, three of them outstanding schools. There are only five other states that have as many as four (Illinois, five; Massachusetts, five; Missouri, six; New York, nine; Pennsylvania, six). To meet the needs of the United States, the Ohio schools should not only be supplying all of the doctors necessary for the state, but a very considerable surplus for those states which have inadequate resources in medical education, and particularly for those twenty states which have no medical schools and which must look to outside medical schools to supply all of their physicians. The Ohio situation distinctly raises the serious question whether we are actually, as we confidently assume, producing the necessary number of graduates to supply the needs of the United States.

Also, the report of May 11, 1925, of the Committee to Visit the Medical School to the Board of Overseers of Harvard College seems to sense the same situation in New England, for it says: "It has been estimated that at least 200 young practicing physicians should come each year from the leading medical educational center of New England to supply the annual loss of doctors in this part of the country. It does not appear that the Harvard medical school is furnishing its full share of the needed quota."

THE FAILURE OF SCHOOLS TO TAKE CARE OF APPLICANTS

The Council on Medical Education and Hospitals indicates that this demand is more apparent than real, on the ground that many students make applications to several schools. It further shows that the present schools have a potential capacity of 5,000 more students than their present scheduled capacity, although why

2. Population, 1920, 2,975,045; number of physicians, 1923, 4,176 (Waite's letter).

the schools do not utilize this potential capacity I have not seen explained. It further emphasizes that last year, for example, there were actually 1,500 less students in the class A schools than might have been accommodated. The fact that 1,500 more students could have been accommodated, if they had known where to go and had gotten there in time, does not cover the situation. Vacancies are not discovered until too late for prospective students to avail themselves of them. Further, it presumes a freedom of movement on the part of medical students which only men in unusually prosperous conditions possess. A vacancy in a medical school in South Carolina or Texas may not help the situation for a boy in Maine or Oregon, particularly if he cannot learn of it until too late to go there.

Information of the overwhelming number of applicants for admission to medical schools comes from all over the country, and an illuminating illustration of the situation was recited to me by an official of the American Medical Association, in September, 1925, who was called on, the day before, by a young man who appealed to him for aid in finding a satisfactory medical school to which he could gain admission. There was absolutely nothing wrong with the young man's case. He had credentials showing first class credits for all of the premedical course from a first class premedical school. His preliminary education lacked nothing. He had an overabundance of the best sort of credentials from his teachers and from others testifying to his ability and scholarship and his general fitness. In short, no one had raised, or could raise, any question as to his being able to meet the formal and the essential requirements for admission to medical school—and yet he presented to my informant, who examined them, thirty-eight letters from thirty-eight different medical schools to which he had applied for admission and given his credentials, each of which stated that it was full and could not take him! This young man could go anywhere to medical school and had a strong desire to study medicine. His mission was to get suggestions of other good medical schools to which he could apply for entrance. My informant was not able to tell him, and could only refer him to the secretary of the Council on Medical Education and Hospitals. The only information, I was informed, that the secretary of the Council on Medical Education and Hospitals was able to give him was that last year there were 1,500 vacancies after the schools got going. But the young man was left in complete uncertainty as to where he could find entrance.

Of course, one reason for this is that the schools are giving preference to men who present credentials above those that are required. A doctor of philosophy will get preference over a master of arts, a master of arts over a bachelor of science; so that a man who has the actual scheduled requirements has fourth or fifth chance. Sixty-two per cent of the graduates last year of the regular schools had college degrees.

It is no exaggeration to say that there is as much demand for admission to medical schools now as there is for admission to some fashionable school for rich girls or for season tickets for fashionable symphony orchestras. And, as Sir James MacKenzie [3] has said on this situation: "If, in any sphere of life, a few individuals [and he is talking about medical teachers] are set apart and given power over their fellows, it is but human that such a select body will seek to aggrandize their position at the expense of their fellows. . . . In medicine, the teachers have practically taken into their own hands the guidance of education and all the intellectual interests of the profession, and ordain the course a man must follow who wants to become a doctor." If, in the last sentence, for the word "teachers" we substitute "educators"—lay and medical—and a relatively small number of them—this statement of MacKenzie's applies exactly to the situation now in the United States.

3. Mackenzie, James: The Future of Medicine, p. 219.

DENIAL OF THE EFFECT OF HIGH COST IN RESTRICTING DISTRIBUTION

There is a widespread tendency among those interested in the status quo to deny the effect of the high cost of medical education on the distribution of physicians or in the expensiveness of medical service. It is generally accepted by others. That principle applies to every commodity. We can give concrete illustration of its perfectly obvious action even in education. For example: A survey of earnings of the Massachusetts Department of Labor makes the following estimates:

A man with a grammar school education earns about $45,000 between the ages of 14 and 60.

A high school graduate earns about $78,000, 51 per cent more, between the ages of 18 and 60.

A college or technical school graduate earns about $150,000, 233 per cent more than the grammar school graduate and 92 per cent more than the high school graduate, between the ages of 22 and 60.

In other words, as these men increase the extent of their education—that is, its cost in time and money—they are able to increase the price which they ask and get for their services.

We cannot deny the great effect of cost of medical education in influencing the distribution of physicians or the cost of their service and maintain our standing as logical reasoners.

NECESSITY OF GETTING MEDICAL STUDENTS FROM THE COUNTRY

We are oblivious to social facts in trying to devise some plan to get our graduates *to go to* the country. That is impossible with city graduates. Our real problem is to devise a plan whereby we can get students to *come from* the country. They are the ones from whom the rural practitioner must be recruited. The country lawyer, the country teacher, the country banker and business man, as the country doctor, do not *go* from the cities; they *come* from the country. And unless we succeed in devising some exotic substitute which the country will accept, we shall have to devise some plan whereby the country doctor can be developed from the country boy.

May I stop long enough to say that I have no respect for the argument which is constantly bobbing up in one form or another that the educated physician cannot be content with country life, or, if honest, satisfied with the services that he can give his patients there. I am quite willing to admit that many people, who have become addicted to the accessories of city life, think the country is intolerable. I, however, do not believe that this condition of mind is an evidence either of superior intelligence or of uncompromising honesty of ideals. I have no respect whatever for the Broadway attitude toward the country which we are assuming in the medical profession. On the contrary, I think there is very little difference, on the whole, between Broadway and Main Street, except that on Broadway you

can conceal your defects better. Ambitions that seek the larger urban careers are often no sounder and are no greater evidence of intelligence, or more successful in their fruition, than are those that accept the simpler and often more satisfactory rewards of rural life. Coming down to our own profession: the city physicians—the rank and file of them, whether specialists or not—do not have more satisfactory, more intellectual or better rewarded careers than do their country colleagues. These statements are not talking to the gallery, and they are not due to any fanciful glamour that I have about the country doctor. They are based on a considerable knowledge of country doctors and an intimate knowledge of the realities of life of city doctors. I should not here consume time with this but for the fact that a great deal of this sort of thing is being uttered, particularly about the intellectual barrenness of life in the country; and it has weight both in our councils and in its effect on our young men.

The country physician can handle 80 or 90 per cent of his practice with self-respect; his city brother can do no more. And as for the intellectual barrenness of country practice, the resourcefulness that it calls for, the responsibilities that it demands, the problems that must be tackled, furnish to an intelligent man a sort of stimulation that is satisfying and that brings out the best that there is in him. What E. J. Swift says of nations may very well be said of individuals: "The best period of a people . . . is their years of struggle, struggle against nature and against human adversaries." But there is no use talking this to the ordinary city bred man, and there is no hope of getting the rural work done by the seven year college men, men that President Nicholas Murray Butler aptly calls "the country club type" that we are turning out. I do not say this in disparagement of them. I am simply emphasizing the fact that that sort of men will not do the world's work.

If we can produce doctors only under such a seven year course as we are now insisting on, well and good. If that is necessary, it must be done. But in doing this we must make up our minds, and not try to escape the fact, that, as a result of our policy, we must forego medical service for the people of the country of the sort that they have had heretofore. It cannot be given.

THE EUROPEANIZING OF MEDICAL SERVICE

Our present policy in medical education is directed to the Europeanizing of medical service. I picked up the *British Medical Journal* of Nov. 14, 1925, and my eye fell on a report of a recent conference in London on the place of the midwife in the maternity service. I find the first sentences in the opening of the discussion as follows: "Dr. J. S. Fairbairn in an opening paper urged that there need be no rivalry between the general practitioner and the midwife. Their functions were not competititve but complementary. *The sphere of the midwife was attendance upon normal labor, and that of the practitioner was the general supervision of the antenatal and postnatal conditions and attendance on difficult labor.*" [Italics mine, W. A. P.] That is what we are heading for in medical service now. Obstetrics is a function of midwives, except in abnormal cases! On the one hand, we make labor a specialist's job and a hospital proposition for the fortunate; and, on the other, we are rapidly bringing about a situation—already widespread in this country—where for the rest of the mothers it shall go to midwives! And how useful will the practitioner finally become whose experience in obstetrics is confined to abnormal cases?

It is not best for the medical profession nor best for the people of this country that, barring the fortunate few, medical service for the common man should be turned over to midwives and to nurses, and to other substitutes for the doctor that we are advocating, all of whom have had flagrantly inadequate training in comparison with anything that I am advocating; and to cultists.

THE RELATIVE COMPETENCE OF AMERICAN PHYSICIANS

And I am more opposed to the Europeanizing of medical service because I believe the failure of individual European medical service for the ordinary sick is not compensated for by the superiority of skill in caring for them of European physicians. I think, as a matter of fact, that European physicians in their surgical and other therapeutic skill—and I am willing to add in professional or other ideals—do not exceed the corresponding men that we have produced. I have no smug feeling that American medicine should be content to indulge in self-approbation—we have been no better than we should be—but no more have I any respect for the feeling that it should look with unalloyed admiration on Europe. Particularly is this true when it comes to the department of caring for the sick. And in research: I am conscious of the extraordinary opportunity for the pursuit of medical research which developed in central Europe under the effective control of autocratic government; but even in leading the way in research of which it is constantly implied we must look to continental Europe for our models—even in leading the way our showing will bear fair comparison: Gorgas, Reed, Weir Mitchell, Leidy, Marion Sims, Morton, the dentist, produced under conditions of education worse than ours, Beaumont, McDowell—these are not names that suffer by comparison with any list of any country. I should be entirely content to see American medicine continue to develop along the lines of American genius.

QUALITY OF OUR STUDENTS

One of the assumptions that we make is that we are getting a better quality of medical students now than heretofore. That is probably a gratuitous assumption. In it we make the fundamental mistake of considering education the equivalent of intelligence. It is, of course, nothing of the sort. We are getting young men of more education, but this fact is offset by our limitation in choice to those of fortunate material position. We are excluding an immense number of boys of high intelligence and boys who are trained to effort, to responsibility, to self-denial and the overcoming of hardships and whose natural intellectual strength is better for this training. As a matter of fact, it is probable that the quality of medical students today is no better than it was formerly. For example: Dr. B. C. H. Harvey,[4] professor of anatomy at the University of Chicago, who is in a position to appraise the quality of students we are getting now, and who has been studying this question, says:

> Comparisons indicate that there has been improvement in the last ten years in the general and special knowledge which students bring to professional schools, but that there probably has been no increase in intellectual power and none in the character of the students.

4. Harvey, B. C. H.: Science, June 21, 1924.

EFFECT OF THE EXPENSIVENESS OF MEDICAL EDUCATION ON THE SCHOOLS AND ON THE STUDENTS

In the problem we are considering, the question of the expense of medical education to the student is little more important than that of its expensiveness to the institution giving it. In the last twenty years, medical education has for the first time become the favorite of philanthropy and has had unlimited amounts of money placed at its disposal. This has been due in part to the influence of the great foundations—specifically the Rockefeller and the Carnegie foundations. With the institutions they have endowed as the examples, the rest, with the pressure we have been able to bring to bear on them, have had to follow suit or lose caste. I have no disposition to question the motives of these foundations —I have unfeigned admiration for them—but I think the question may fairly be raised whether their course has been an influence altogether for good in our policy of medical education.

The chief spokesman on medical education, first for the Carnegie Foundation and then for the Rockefeller Foundation, has been Mr. Abraham Flexner. Mr. Flexner's ideals in medical education are exemplified in Johns Hospkins Medical School and in the German universities, of which Johns Hopkins has been our nearest exemplar. And with the enormous funds which have been behind the policies that Mr. Flexner advocated—and with the good qualities of those policies—the policies of the foundations in medical education have become the policies of American medicine. The result is we have set up standards for medical schools which can be actually reached only by a few institutions. It is apparently the policy of the General Education Board to establish a few medical schools in strategic locations which shall exemplify its ideas of medical education. We need a few such institutions; but we need many more, not ineffective and often weak imitations of these, but less ambitious schools devoted to the sound preparation of physicians for the everyday work of medicine. One trouble is that every school wants to be high-brow. Nobody wants to do the ordinary useful service. We see the same human trait in practice. We had it well illustrated in the venereal and genito-urinary service in the army during the Great War. We had no trouble in getting men who wanted and were able to do major genito-urinary surgery—of which we had little to do—but nobody wanted to treat the common venereal infections; and we found it impossible to get enough willing competent men to do this vastly abundant and important work.

The report of the Committee to Visit the Harvard Medical School (1925) estimates that "the Harvard medical school takes annually from the community, including the yearly expenditures and the interest on the school plant, but excluding that of the adjacent hospitals, the amount of a million dollars." Harvard has approximately 500 students in its medical school. It is then costing Harvard approximately $2,000 a year to teach each medical student, or $8,000 to produce a graduate, if every student graduates.

Or take, again, the new Vanderbilt medical school: It represents in buildings and endowments over $8,000,000. This means in interest alone an overhead of $400,000 a year. Its capacity is 200 students.[5] That means that each student will cost the institution $2,000 a year for his education.

Bevan[6] estimates the cost of the development of a medical school plant at from $1,500,000 to $3,000,000, exclusive of 10 to 20 acres of land in a large city! His estimate of the annual cost of conducting a first class medical school is from $165,000 to $350,000, which he estimates to mean an endowment of $3,500,000 to $7,000,000, a total for buildings, exclusive of grounds, and for maintenance of from $4,800,000 to $10,000,000, "and this is without charging to the medical school the cost of building and maintaining hospitals and dispensaries, or conducting the clinical departments on the so-called full-time clinical basis."

This is making medical education prohibitive to educational institutions as well as to students.

It is costing society from $5,000 to $10,000 to produce each of its doctors, and the doctors an aqual amount more.

The General Education Board[7] assumes that a college needs $250 annually per student—i. e., the graduate costs $1,000; and less than 8 per cent of the students are in college thus circumstanced. Medicine is four or five times as expensive, and 100 per cent of the schools are supposed to have the necessary income for their proper support.

Of course the expensiveness of medical education now is chiefly due to some of the policies which we are urging or requiring. Among these are:

1. The emphasis on the importance of the full-time professor, usually in a very strict sense.
2. The emphasis on research rather than on teaching.
3. The selection of teachers on the basis of research rather than teaching.
4. The urging of the teaching and research hospital.

The responsibility for these lie largely with the foundations and with their small group of advisers in medical education. The foundations have not, I am sure, tried to force their influence on us. On the contrary, they have tried to avoid this very thing. Some of their chiefs have spoken against the danger of some of these policies, as, for example, the policy of undertaking to produce investigators rather than practitioners. Nevertheless, these policies have represented their attitude as expressed by their usual spokesmen and by the schools which they have chiefly endowed; and the weight of the foundations is so enormous, because of the potential endowments from them which expectant schools see, that the evidence of their preference for these policies has had more influence than the most insistent advocacy in other quarters could have exerted.

It is further true that many of the chief spokesmen on educational policies in our councils have not viewed the situation with a background of wide experience in the practice of medicine or, sometimes, even in teaching. This situation has been exaggerated by the full-time teachers. They are apt to speak purely from the academic standpoint. They are interested in medical education as such; its practical application in medicine may be a matter of small concern with them; sometimes actually of disdain. It is not true that they have not contributed valuably to medical education, but the danger of it is that these groups are more interested in education itself than in its product. Their ideal is the "university of applied biology," as the Harvard committee calls the Harvard Medical School.

5. Robinson, G. C.: The Relation of Medical Education to the Medical Plant, J. A. M. A. 81: 321 (July 28) 1923.

6. Bevan, A. D.: The Organization of the University Medical School, J. A. M. A. 86: 591 (Feb. 27) 1926.

7. Report, 1924-1925, p. 5.

CRITICISMS ON OUR EDUCATIONAL POLICY

All of these policies are not only open to criticism on account of their expensiveness, but to close scrutiny as to their pedagogical soundness.

The full-time professor policy is the object of widespread criticism, and I shall devote few words to it, beyond saying that I am skeptical about it. I should be willing not only to see the clinical work done by part-time men, but the fundamental work as well. We seem to be more sensitive in medicine about this than is science in general, for it is the constant experience to see professors in other fields than medicine actively engaged outside their academic positions. One of the most brilliant investigators in American science, the holder of a chair of pure science in one of our greatest universities, told me in recent years that there had never been a year since he held a professorship when he had not earned more than his university salary in business, plain ordinary business.

Research and education are not the same thing. Overemphasis on research is overloading medical education. The undergraduate student is not, except in very rare instances, prepared for research or likely to benefit by the attempt, and very often no more is the man, who may be an excellent teacher, suited for it. As James Harvey Robinson says, "The sustained and arduous scientific work which has gradually built up our fund of knowledge is a pursuit for the few." Research also is not the criterion on which to select undergraduate teachers. Teaching is a function calling for definite capacity, and investigators may have little of it.

J. B. S. Haldane,[8] reader in biologic chemistry at Cambridge, says on this point:

> A great discoverer can generally expound his own work, but he may be a thoroughly bad elementary lecturer and an extremely incompetent administrator of a laboratory. It would be an advantage to education as well as to research if these duties could be more often separated.

And, as Robinson[9] says again, "In the enterprise of rehumanizing knowledge it is necessary first to recognize that specialization, so essential in research, is putting us on the wrong track in education."

The upshot of it all is that in our worship of research we are not only making the expense of medical education prohibitive, but we are on the wrong track in undergraduate education.

Suppose we returned to the policy of education for its own ends—to the position where the students got this impression: "Your business here is to equip yourselves for the practice of medicine, on the basis of existing knowledge"; suppose, then, we picked our men carefully on the basis of fitness and quickly got rid of those who showed we had made a mistake in their selection; suppose, then, we gave them three academic years of nine months of sound education in two and one-half calendar years; and then suppose we put them in good apprenticeships in hospitals for at least eighteen months, where they would learn the practice of caring for the sick by actually doing it under experienced men. Can any one doubt that we would make well prepared doctors in that way? That is about the way nearly all the best physicians in this country have been educated. The question is whether we shall turn out well grounded, soundly trained physicians, or, for the most part, weak imitations of Ph.D.'s.

Such a course provides for adequate clinical training—the essential things of all others. The laboratory is all right, but the elementary laboratory training a student needs to become familiar with laboratory methods in science and with the simple technic he needs in practice is easy, compared with a clinical training; but it cannot be substituted for it. Sir James MacKenzie has considered this subject in the chapter on medical education in his book "The Future of Medicine," and has sharply criticized present American medical education on this score.

This is the great defect, constantly criticized by clinicians, in our present type of research graduates; they are dependent on the laboratory. They do not know clinical methods or appreciate their importance. That does not make independent, useful practitioners. The resourceful man has his equipment under his hat and in his hand, and he gets it, not in the laboratory, but in clinical experience.

Suggestions such as I am making have the approval of a very large part of the profession, including many of the ablest men in it, but the opponents of them think it is a sufficient answer to say the suggestions are to give a superficial and inferior education—poor doctors for poor people. The attitude of a good many is well characterized by Robinson[10] when he says, "Those professionally engaged in the business of education are wont, as Vablen puts it, to indulge themselves in 'truculent quietism.' This permits of free expression of discontent without threatening comfortable habits."

Charges of superficiality and unsoundness cannot be made to hold against such an education as I have outlined, provided it is sincerely and soundly carried out. A less extensive education, thoroughly well grounded, would be better than the excessive amount of detail we are trying to cram into four academic years; that is unsound education. Let me quote on this point some thinkers on education of the highest rank:

Sir James MacKenzie says:

> It is far better to understand a few matters thoroughly than to have a superficial knowledge of a great many things.

Professor Robinson,[11] who, let me remind you, is the author of the "Mind in the Making" and the "Humanizing of Knowledge," one of them certainly an epochal book, says again:

> It is amusing to note the many things which college instructors and writers of textbooks include in their lectures and manuals which they themselves would not be able to recollect between times.

And as that other great educator, E. J. Swift, professor of psychology and education in Washington University, puts it:

> In science, conclusions and principles should be remembered. They are few, and facts are many.[12]
>
> Information is of value only to the extent to which it enters into one's thinking.[13]
>
> It "from the standpoint of memory is of two kinds: That which we need so constantly that it must be kept 'in mind,' and that which we look up as occasion arizes. . . . Efficiency requires, among other things, that the mind be not overloaded."[14]

8. Haldane, J. B. S.: Science and Cash, Atlantic Monthly, February, 1926, p. 175.
9. Robinson: Humanizing of Knowledge, p. 76.
10. Robinson, Humanizing of Knowledge, p. 99.
11. Robinson: Humanizing of Knowledge, p. 106.
12. Swift, E. J.: Psychology and the Day's Work, p. 270.
13. Swift, E. J.: Psychology and the Day's Work, p. 198.
14. Swift, E. J.: Psychology and the Day's Work, p. 199.

And take even the opinion of a man in a specialty so elaborate as Paul Ehrlich's, of whom it is said: "It is interesting to note that he considered the acquiring of unnecessary knowledge as actually undesirable." [15]

Let any one who doubts the soundness of the principles stated by these men consider not simply the knowledge which constitutes his daily working equipment, but that which forms the background of his intellectual position in life. I would reduce the time of academic undergraduate medical education on the basis of these sound educational principles. With such principles as a guide, and with insistence on a supplementary clinical training, I have the temerity to believe we could very much improve on the longer education we are now giving.

As to how I would reduce the length of the academic course in medicine I shall only hint by referring to my experience with this paper: It was originally twice its present length; when I was confronted by the necessity of shortening it, I did so—and to the advantage of the paper.

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MEDICAL EDUCATION AND THE YALE ANNOUNCEMENT

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We may ask regarding the medical curriculum the same old question which Professor Jennings [1] has recently asked about man, "What's the matter with the medical curriculum?" and no antiphonal chorus answers back, "It's all right." If it is not all right, what is the matter with it, and what has it failed to do? There is nothing more important to the student or to the medical profession than these two difficult questions.

A certain group of articles on medical education usually begin with the statement that the chief object of medical education is to produce capable practitioners of medicine. Such an assertion sweeps far beyond the border of obviousness. No sane person questions the statement or is unaware of the thought conveyed. The chief duty of the medical school *is* to educate or develop practitioners of medicine, but this obvious assertion immediately suggests the question, Who is to teach and train these future practitioners of medicine? Is not another major function of the medical school to produce the teachers and investigators who are to constitute the faculty of university medical colleges?

The problem in full involves two considerations: First, has the present system of medical curriculums in this country served excellently well for training the practitioner, and secondly, has it been successful in producing teachers for the medical faculty? Some might claim that the present system is very good, if not the best, for training the medical practitioner. However, an attentive listener will frequently hear from persons having considerable knowledge of the subject that this system does not give the best results with the materials at hand. Good physicians are produced, but it is also probably true that the system might readily be improved, so as to give a far better and more useful training to the future practitioner.

When we attempt to answer the second question, namely, whether the strict class system of the present curriculum supplies the teachers for the medical schools, all must admit that in many directions it has largely failed. The professors and teachers in the clinical subjects have chiefly, if not almost entirely, been trained under this system, but the best of these have invariably been obliged to resort to further individual training and education in order to equip themselves to start their teaching career. When, however, we consider the laboratory and so-called fundamental departments of the medical school, one is disappointed to find that the professors, teachers and investigators in these departments are not, in the majority of cases, products of the medical curriculum. A few years ago, I [2] pointed out that only three or four professors of biochemistry in American medical colleges had ever pursued the medical curriculum or taken a medical degree. About 50 per cent of the physiologists had been trained in other schools of the university rather than in the medical college, and only 55 per cent of the anatomists of professorial rank had experienced the training supplied by the medical curriculum.

This state of affairs certainly indicates a considerable lack of success on the part of the medical colleges in exciting interest in the laboratory branches of medicine, and also a failure to encourage and develop the type of student who is primarily interested in becoming a scientific investigator and teacher in the fundamental departments of the medical school. There is no doubt that persons with such interest do exist in this country, and that they go to the university to equip themselves for exactly this kind of a career. These persons, after attending the other schools of the university and acquiring their preparation, have then come to join the medical faculties of the country. They have been admitted through necessity, on account of the fact that the medical colleges have themselves been unable to produce a sufficient supply of teachers and investigators to man their own faculties.

The situation in some branches has recently bordered on the deplorable: A few years ago there was available at one time three of the most desirable professorships in this country in a given laboratory branch. But there was not, in the opinion of the faculties concerned, an altogether desirable man available for any one of the three positions—in fact, the condition demonstrated in a decided manner that there were not enough fully recognized professors to go around, even for the best medical schools. A considerable makeshift was resorted to in meeting this situation, and the general development of the particular subject in this country was at least not greatly advanced.

Recently, a strikingly similar situation has presented itself in another laboratory subject, and two of the leading medical schools with the largest budgets for the given departments in the country have been unable to secure the kind of men they most desire for their positions. In the laboratory departments of the medical colleges, there are often two or three positions available for every man well equipped in the subject. This is certainly a most embarrassing disadvantage to the medical schools and is quite in contrast to the situation in chemistry, physics and biology in this country, in which there is actually more than one fully qualified man available for every position in the better universities. If

15. Science, April 11, 1924, p. 33.

1. Jennings, H. S.: Promethius, Today and Tomorrow Series, New York, E. P. Dutton & Co., 1925.

2. Stockard, C. R.: The Laboratory Professor and the Medical Sciences in the United States, J. A. M. A. 74: 229 (Jan. 24) 1920.

the universities do produce men scientifically trained and qualified to man the other natural sciences, why is it that the medical schools have not acquitted themselves equally well? This is certainly not impossible to accomplish in the medical school, as one readily recognizes on surveying the European situation. In more than one of the continental countries of Europe, there are several fully equipped men available for every vacant professorship in the medical sciences that occurs. Not only do these medical schools produce an abundant supply of men for their own faculties, but also it frequently happens that professorships in other departments of the university are filled by men trained in the medical colleges. In other words, the medical schools in several European countries are real functioning divisions of the university. These schools have not only trained practitioners of medicine which compared very favorably with our own medical corps during the Great War, but also have produced a distinguished personnel to man their medical faculties.

There are certain physicians in the country who would meet this problem by having these laboratory branches taught by practitioners of medicine on a part-time basis. They forget that teaching scientific subjects is a profession in itself and cannot be satisfactorily done as a side issue. The teaching of medical students is no more the job of an amateur than teaching chemistry to engineers. Surely one would not prefer an anatomist rather than an abdominal surgeon to remove his appendix any more than he would prefer a surgeon instead of an anatomist to explain the morphologic significance of structural arrangements. Medical education is now largely, as it should be, influenced by the universities, since they conduct most of the medical schools.

FAULTS OF CLASS SYSTEM AND TYPE OF CURRICULUM

When all is considered, there is some reflection on the total accomplishment of the American medical school in failing to produce the scientific members of the medical faculties, and the doubt also arises in the minds of many as to whether our schools really make the best practitioners of medicine out of the material that comes to them. One of the chief causes of this trouble is largely, I believe, the prevailing class system and the medical curriculum itself. The medical classes are run on lines closely similar to those of the elementary schools. The curriculum is, as a rule, much more rigid than even the undergraduate arts college curriculum. Many of the better medical schools have high requirements for admission, and their students must have received baccalaureate degrees from college. Such students are sufficiently mature and sufficiently educated to enter any of the graduate schools of the university; they are certainly advanced enough to be treated as individuals and to be allowed to work somewhat as their talents and temperaments direct. Yet in the medical school these college graduates are put into rigid classes, just as if they were entering an academy. Each class has mapped out for it a definite routine of courses which every member must attend at the same time and which the entire class must finally finish on the same day. A glance into the world at large would suggest to any one that no fifty persons can complete exactly the same task in exactly the same length of time, aside from the fact that they will not all do it equally well. Some persons are capable of completing a given task in half the time required by others while, on the other hand, some may require far more time than the average, and yet, in the end, the slow individual may accomplish the task best of all. Is it absolutely necessary that this class group of different students must lock-step through any particular course in the medical school? President Lowell [3] of Harvard has recently emphasized the fact that the individual student is the actual unit in education, not the course or the class. In medical education the course and the class may be actually smothering this unit.

Since there are to be only a certain number of courses and every student is to take each one of them, the members of the faculty naturally begin to compete and, to put it mildly, wrangle among themselves for their individual allotment of hours in which to attempt to cover their subjects in a routine way. This brings about a rigid and entirely arbitrary division of time for the several courses, which not only concerns a given school but has actually extended into national proportions, and committees are appointed from the country at large to determine how much of the student's time must be allotted to this, that and the other course.

In such an arrangement, it is erroneously presumed that all teachers can present one subject in a more or less satisfactory way in exactly the same number of days, and that any subject is equally important or equally unimportant, in spite of the ability and distinction of the teacher. One can scarcely imagine an arrangement more completely devised to suppress the individuality and taste of the student or more surely to stunt and dampen the originality and enthusiasm of the teacher. Periodic waves of dissatisfaction develop against this system and a national epidemic of curriculum revisions takes place, one of which we passed through only a few years ago. The interesting thing is that, in spite of this feeling of dissatisfaction, nothing really important happens to the curriculum; there is applied merely a process of addition and subtraction; a few courses are slightly extended in time and most courses are curtailed, but the general system of lock-step class performance is strictly maintained.

Now, is this type of medical curriculum actually necessary or essential in order to produce a good practitioner of medicine? Is it not possible or even highly probable that a better trained, more independent and thoughtful practitioner of medicine might be derived from a more encouraging and diversified type of education?

THE YALE PLAN

A highly promising and stimulating occurrence has recently been reported from the Yale University School of Medicine. The faculty there has decided to conduct the medical school in the same general way that has proved successful in the other divisions and schools of the university. Please let it be understood that by "university" I am not referring to the undergraduate college but to the schools that are attended by the mature students who have previously received their bachelor degrees from college. The graduate schools constitute the university in contrast to the college. The general attitude in the university is that a mature student enters there to receive an education or a training in some subject or profession that he desires to pursue throughout the rest of his life. He must be equipped for this job not merely by being crammed with facts but by being helped to learn the method and the

3. Lowell, Lawrence: Address before Meeting of American Medical Colleges, Boston, 1925.

philosophy of his calling. If, for example, he expects to be a chemist, he enters the school or department of chemistry and, in conference with one or more professors in that school, works out a general plan of study and then goes ahead on his own responsibility to attend certain courses of instruction and laboratory work, until he has finally covered the chosen field in a sufficiently complete way. He then applies for some form of qualifying test or examination, on the basis of which he is to be granted a degree and delivered into the world to work in his science or profession.

The medical student, as I understand the plan, will approach the Yale medical faculty in the same way—he comes desiring to receive an education for the medical profession. He ascertains the general requisite of study necessary to attain his ambition and he also learns, of course, that the various subjects must be pursued in a more or less definite order because certain subjects presuppose a knowledge of others. The entering student will, therefore, probably register for courses in anatomy, chemistry and beginning physiology, but he will not become a member of a class. He may even be permitted to try certain clinical subjects before taking the laboratory branches, as Dr. Cushing [4] has recently suggested in a discussion of medical education. There will be no first-year class. There will merely be a school filled with medical *students*.

The department of anatomy will offer courses in anatomy that any one in the school may elect, and the professor will teach these courses in as systematic a manner as he thinks fit. He is free to make the course sufficiently long to cover the subject as he decides is necessary. If demonstrations are given, they will occur, of course, at particular times, and all students who care to attend them will necessarily appear at the given time. The laboratory work may also be systematic and formal or may be very open in its arrangement. The student is perfectly free to attend as much or as little of this subject as his interest dictates. The bright, fast student might be able to cover the subject in a very short period of time; the ordinary student would require longer, and the slow student, who might at the same time be a very intelligent person, could remain as long as he found it necessary to complete the subject to his own satisfaction. The professor's task is to encourage, stimulate and lead the students but in no sense to herd and to drive them in order to force them to study and learn the subject he is teaching. After the student has had a sufficient experience in a certain course, he then registers for further courses in the medical school, and is taken into pathology, medicine and surgery. The professors in these subjects, as in other branches of the university, will at their own discretion admit students to their course who they feel are properly qualified on account of their previous work and knowledge of underlying subjects. Examinations may be given at regular or irregular intervals, and all students having been previously registered in any particular course may present themselves for these examinations in order to qualify in the subject. Up to the present time, in all universities it seems necessary to have some type or method of examination in order to determine whether a student has actually succeeded in mastering a sufficient knowledge of a given subject; in other words, he must qualify on what he has undertaken. The world in general requires this much of us all.

4. Cushing, Harvey: The Clinical Teacher and the Medical Curriculum, J. A. M. A. 82: 841 (March 15) 1924.

The great advantage of the Yale plan is the emancipation of the student from the rigid class which holds back the quick, bright individual and embarrasses the intelligent, slow student, neither of whom keeps step with the mediocre pace-makers. The stupid person is readily eliminated, being unable to find his way without a herd to follow.

It is undoubtedly a most important occurrence for American medical education that the Yale medical school should have put itself on a truly university basis in its function as well as in its organization. The university method is certainly the one that develops individuality and originality in the student, and at present it is the only system that fully allows a student to become interested in certain phases of a subject and to be free to develop and follow his interest in those directions. The university system also encourages and promotes the highest and most stimulating type of teacher. The teacher must become a leader rather than a schoolmaster. The student becomes interested in the teacher and in his manner and methods of work, not as a person who is superior and set over him, but as a person of wider experience, with whom he is privileged to work as an associate. Every one remembers from his student days a few such teachers, and he values any opportunity he may have had to have been associated with them instead of having merely sat under them.

This step on the part of the Yale medical school will be looked on as quite a venture by a great number of medical educators in this country. It will likely be somewhat misunderstood. Some will sense a smack of radicalism. Others may imagine it the adoption of a loose, unsystematic, indefinite system which can never be substituted for the rigid arrangement now generally followed; but to all those who have worked and studied both in the college and under the medical curriculum drill, as well as in the true university system, there will appear nothing new or dangerous in this undertaking. It is just this truly university method that requires more of the student than any other—he is put on his own responsibility; he is treated as a man and an individual and, if he has the right quality in him, he always responds. The most earnest, sincere, hard-working group of students that one may find is to be seen working year after year in the university departments of biology and other sciences in this country. These students must stand on their own responsibility and their own initiative. Any person who thinks that the Yale medical school has lowered its standards or has made its medical course easier to get through had better try such a system for a year, and he will soon learn how much it requires.

Of course there is no reason to expect that other schools in the country may immediately adopt this change. Certainly not all of them could, nor are all students equally suited to such a method. But all medical schools that do inaugurate such a plan will very probably attract a highly qualified and intelligent group of medical students.

The country at large owes its thanks to the faculty of the Yale medical school for having taken a definite step in what is probably a very wise direction. It is at least gratifying that one school should have asserted its individuality and independence by introducing a really different system, rather than simply following through the stagnant style of addition and subtraction, as applied to the several courses in the medical college.

THE INCREASE IN MEDICAL KNOWLEDGE

Obtaining a medical education is, after all, an intellectual pursuit leading to one of the learned professions. Medicine is really a much higher profession than most medical men realize, and the fact that it may be practiced in a crude and routine way, with a kind of success and prosperity, does not argue against the fact that it can be properly practiced and possibly advanced only by persons understanding and applying scientific biologic knowledge. The curing of disease must be a reestablishment and adjustment of the deranged functions of particular organs and parts of the body, and in order to do this it seems logically true that the physician should have a thorough comprehension of the functions and interrelations of these organs and the way in which they have been disturbed or modified by the aggravating condition. This is certainly no simple problem, and in every sense is a most difficult one to undertake. It cannot be done on an arbitrary, dogmatic rule-of-thumb system which befits to some extent the trade school and leads to a trade or business rather than a profession. When one advocates poorer schools and short cuts and medical apprenticeships in order to produce cheap doctors to supply the country districts, we wonder and then realize that medicine has passed on considerably from where it was forty years ago. To become a constructing engineer today, with the vast developments in building and mechanics, one can scarcely qualify on the training that was adequate years ago. Yet, a trade apprentice may still become a carpenter or a mason. Medicine has advanced wonderfully and is a very different thing now from what it was at the middle of the last century. It may be stated that it almost requires a different taste and different type of mind for the highest quality of medical practice now as compared with then, and this is said with all regard and respect for the high ideals of the physicians of past generations. The ideals have not changed, and it is very questionable whether they have been improved on; but the knowledge necessary for an intelligent performance in the profession has certainly been remarkably revolutionized and increased.

Education in the fundamental principles of a profession is the kind of training which enables the professional man to attack and solve the problems that present themselves in practice. After all, when we really think seriously, we are inclined to believe that medical education does belong to the university system rather than to the academy drill.

Adequate Public Health Nursing.—It has been said that public health work today in any community can be measured by the extent to which public health nursing has been developed. To a certain extent this is probably true; but opinions as to what constitutes an adequate nursing service seem to differ rather widely. The theoretically effective ratio is usually 1 nurse to 2,000 or 3,000 population, and yet in ninety-nine large cities for which records are available the average ratio for the whole group is 1 to 5,000, approximately. It varies from 1 to 6,300 in the group of larger cities to 1 to 5,400 in the smaller cities. In the "ideal" plan of organization for a city of 100,000, proposed by the committee of the American Public Health Association in 1923, thirty nurses were considered necessary to provide adequate preventive work, or an increase to fifty nurses if bedside care on an hourly basis is provided. Even with more conservative provisions, it is apparent that the majority of cities at the present time are inadequately equipped to provide even a reasonably satisfactory service.—Cumming, Hugh: *Pub. Health Rep.* **41**:379 (Feb. 26) 1926.

PHYSICAL FITNESS IN THE COLLEGE*

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Perhaps there is no better demonstration of the fallacy that may arise from limiting oneself to a special point of view than appears in findings with reference to the physical condition of college men. The attitude of the physician toward health may too often be stated that as a result of the examination of an individual, if actual disease is not found, the individual is considered well.

By this process the human race consists of two groups—the sick who have been thus labeled because of medical examinations that look for disease, and all the rest who are perforce said to be well. During recent decades, this undistributed group has been somewhat reduced by discoveries that afford labels for previously unidentified diseases. Among these conspicuously appear thyroid disease, glycemia and allergy.

Work in college groups almost exclusively confined to medical examinations shows results on the whole very similar to those secured by Lee at Harvard, where actually recognized disease was found to be almost negligible from a statistical standpoint. This frequently means that, apart from some slight limitations placed on those with heart disease with reference to athletics, the college men are left to the tender mercies of the educator who feels justified in making the work schedule on the principle that all men are physically equal. The physical educator acts on the same assumption and often overtrains the physically unfit, not realizing their true condition.

If, however, college men are examined from a different point of view—that of impaired health or, as it may better be described, physical unfitness—a very different state of affairs is at once discovered. As Lee[1] says: "However, it was perfectly evident that although 95 per cent of the college population were organically sound, in that no organic defects could be found in any organ or tissue of the body, nevertheless 95 per cent of the college population were not entirely robust, healthy individuals." Thus, for example, 645 men entering Dartmouth College in the class of 1927 were distributed on the basis of the relationship of weight to height, as shown in table 1.

TABLE 1.—*Relationship of Weight to Height in Six Hundred and Forty-Five Dartmouth Students*

	Per Cent
Obese (20 per cent or more over average weight)	3
Safety-weight zone (0 to 20 per cent over average)	42
Borderline (underweight, less than 7 per cent)	25
Seriously underweight (more than 7 per cent)	30
	100

This classification, which is the result of a study of many thousands of physical-growth and social examinations made in clinics and schools, agrees in all essential details with the grouping used in a Carnegie Institution report made by Director Davenport.[2] Here it is shown

* Detailed accounts of the physical fitness work in colleges have appeared in the Dartmouth Alumni Magazine for February, May and November, 1925, and in the Massachusetts Institute of Technology Publications **60**, no. 11. Reports in more popular form can be found in the Woman's Home Companion for July and September, 1925. Reprints will be furnished on application.

1. Lee, R. I.: Some Confessions of an Internist Regarding Body Mechanics, J. Bone & Joint Surg. **5**: 747 (Oct.) 1923.
2. Davenport, C. B.: Report, Carnegie Institution, December, 1925.

that the underweight groups (characterized by Davenport as "slender" and "very slender") were from six to twelve times more in danger of tuberculosis and from three to six times more susceptible to respiratory diseases and nervous disturbances than the general population.

If we make further examination of college men with reference to their health habits, we find that in this respect they are apparently no better off for having gone to college. More students who need to do so wear glasses at Harvard at the close of the course than at the beginning (freshmen, 38 per cent; seniors, 42 per cent). But in the matter of health habits a study of public, parochial and private secondary school students, and of men and women in their undergraduate years and in medical school, shows no indication of any increase in health intelligence, because training the intellect has little or no effect in improving health habits.[3]

Apparently this percentage of physical unfitness with the accompanying predisposition to disease, as shown by Davenport, is not being taken as a cause of alarm. Our early findings concerning children were very much the same, and these were abundantly confirmed by the draft during the late war. The published material from these draft board examinations gave a practical foundation for a system of preventive medicine, yet almost nothing has come from them.

We can do something more than comment on this condition of affairs, for we are able to report remarkable results in dealing with the situation as far as it concerns the college man.[4] We have hundreds of charts made in the early stages of work with children, which register the ineffectual results of the usual general attack on health habits and poor hygiene. Actual progress began when enough cases had been analyzed to make a rough classification of the real causes of the major part of these cases of physical unfitness. Attention was then focused on (1) finding the physical and social causes of the particular condition and accomplishing their removal, and (2) bringing together in an adequate program the forces necessary to raise the health intelligence of the individual. When the causes of the condition have been eliminated and he has become free to gain, nature and better habits of living will get the child well.

We have found, on the whole, that the same causes operate among college men as appear in dealing with the younger members of the growing period. College students naturally come from homes of greater opportunity than the average economic status. We have been surprised to find that there is often a higher percentage of underweight in the families of the well-to-do than in those who are socially less fortunate. The greater attention given by the former group to the removal of physical defects and to better food and health habits favored by superior environmental conditions seems to have been more than counterbalanced by the demands of a more complicated social life in home and in school, and by the overdoing of recreation and amusement.

Fully 90 per cent of these cases of physical unfitness can be traced to one or more of the following causes: (1) physical defects, especially nasopharyngeal obstructions; (2) lack of control (this includes many factors that are now receiving consideration in the field of mental hygiene); (3) overfatigue; (4) faulty food and food habits, and (5) faulty health habits. It is evident from a study of this group of causes that the condition they deal with is fundamentally medical yet that it is essentially a problem of education. This fact no doubt helps to an understanding of the slowness with which the situation has been brought to consciousness and dealt with by means of an adequate program.

Reference has already been made to the cordial support given by students and executives to this new departure in college health education. The only drawbacks were found among men of academic bias who cannot easily rid themselves of the class-room mind. To them the college program is a sacred matter not subject to change on the basis of new experience and needs that old conditions did not make it possible to recognize. Any interference with their vested rights seems unwarranted, and justification of the position taken, if any justification seems called for, is founded on formal and academic considerations and shows no appreciation of the dependence of mental development and achievement on adequate health conditions.

This type of mind is apt to be found as often among men working in the newer fields as it is among those who are closer to the classic tradition. In marked contrast is the remarkably wide vision of many of the men who are now at the head of large educational situations in school systems and colleges. They are able to see that, even for those who prize only such accomplishments as they desire to distinguish from the physical by emphasis on such terms as mental, intellectual and spiritual, the only sure road is that of essential health requirements. But these men of larger vision also see that they have responsibility for the great waste of life due to an effort to achieve academic, athletic and other results without making provision for the foundations on which they rest. It is the old story of bricks without straw; or, to change the figure, modern education demands and gets its pounds of flesh without considering that in so doing it renders impermanent and unserviceable much of the accomplishment for which it has worked so hard. After all has been taken into account, there is no more fundamental task for the school or college than to make such requirements as will bring its members at the start into condition to cope adequately with the factors essential to the training it is to afford them, so that during college life and in the years after leaving college they may pursue a course of mingled intellectual and physical activities in comfort and health, with a real appreciation of the joy of living and a sense of adequacy in meeting the economic and social needs of private and public life.

SUMMARY OF OBSERVATIONS

1. Of 645 men entering Dartmouth College in the fall of 1925, 3 per cent were obese (20 per cent or more above average weight); 25 per cent were underweight, but less than 7 per cent; 30 per cent were seriously underweight (7 per cent or more under average weight for height); 42 per cent were within the range of the safety weight zone.

2. The basis of comparison is the gain made by an average 16 year old boy—the last year of rapid gain—an annual rate of 8 pounds (3.6 Kg.).

3. These findings on "health intelligence" will be reported in a later article.

4. Practically all sections of the period of growth have been successfully tried out with this nutrition or physical fitness program, with the exception of the industrial group parallel in years with secondary school and college life. Preoccupation with school and college problems has prevented more than a glance at the possibilities of this section. Some experiments have been made by cooperating agencies. An interesting report is at hand from a group of nineteen young men and women ranging 20 years of age and more, employed in Indianapolis. The average percentage of underweight at the start was 18. During a term of thirteen weeks, the members of the class averaged 4¼ pounds (2 Kg.) gain in weight. This would amount to an annual rate of 18 pounds (8 Kg.).

In representative groups, the average gain per week for each member of physical fitness classes ranged from $^{36}/_{100}$ to $^{46}/_{100}$ pound.

A comparison of the weghts of 427 not including those in physical fitness classes, taken in the fall and in May, shows practically no gain in weight for the group as a whole, except that the obese group increased 50 per cent in numbers during the interval.

TABLE 2.—*Gains of Representative Groups (Basis of Comparison Gain Made by Average Sixteen Year Old Boy)*

	Men	Percentage of Gain	Average Pounds	Annual Rate, Pounds
	60*	295	...	24
	89	313	6.4	25
	70	267	4.7	21
	25	333	6.8	27
Athletes	21	464	6.2	41
Upper classmen	22	476	5.7	42

* Averaged 12 per cent (18 9/10 pounds [8.6 Kg.]) underweight.

Eighty-nine men who were in physical fitness classes gained an average of twelve and one half times as much as did 427 men not in classes in a longer period of time.

Fifty underweight men in physical fitness classes gained four times as much as did fifty underweight men not in classes. The former group gained 150 per cent of the gain in height made by the latter group.

Twelve men in the first nine weeks of class work made 477 per cent of the gain they had made in the nine weeks before entering on the physical fitness program.

Ninety-one men reporting in April gained, by the time they entered college in September, 759½ pounds (344 Kg.). This amounts to 36 per cent of the actual deficit of the group reported.

Various groups in a physical fitness class averaging 333 per cent showed, in various sections, the percentages given in table 3.

TABLE 3.—*Data of Weight Gain in Various Sections of Physical Fitness Class*

Excess social activities	267 per cent
Training for teams	199 per cent
Physical overexertion	223 per cent
Not enough outdoors	274 per cent
Sweets between meals	216 per cent
Poor cooperation	216 per cent

In other classes, men observing late hours made nearly 100 per cent less than the group as a whole; tobacco users averaged 263 per cent, as against 307 per cent made by nonusers; those marked excellent or good for carrying out physical fitness program instructions gained from 50 to 100 per cent more than those marked fair or poor.

3. The underweight men average about six physical defects each—a range of from two to ten. About half of these were due to nasopharyngeal obstructions and about one fourth were defects of posture. From a third to a half the men had already been operated on for the removal of diseased adenoids and tonsils. In one group 84 per cent were recommended to have expert nose and throat examinations—48 per cent received negative reports and 36 per cent were advised to have throat operations.

In the class averaging 333 per cent in weight, the percentage of gain in the various groups was as shown in table 4. In the group averaging 295 per cent, those who deferred recommended operations averaged 152 per cent gain.

4. The chief difficulties, in the order of their effect on weight, were: (*a*) grouped examinations; (*b*) "chinning" season, carnival, and vacations; (*c*) competition in athletics and other extracurricular activities.

TABLE 4.—*Data of Weight Gain in Underweight Men*

Number of Physical Defects	Percentage of Gain
From 2 to 4	378
From 5 to 7	310
From 8 to 10	153

5. For the entire freshman year of the class of 1927 at Dartmouth, the obese group showed the lowest percentage of illness from nasopharyngeal causes; the underweight students had twice as much nasopharyngeal illness as the optimal group. About 40 per cent of the students were absent for illness during the year, losing about five and one-third days for each man ill and about two days for the whole class.

TABLE 5.—*Morbidity Data for Class of 1927 at Dartmouth*

College Year	Percentage of Illness
1921	29
1922	29
1923	44
1924	32

Distribution According to Residence	Percentage of Illness
5 houses, each less than 50 men	27
10 houses, 50 to 100 men	31
1 house, 103 men	39
1 house, 155 men	43
Residing in town	56
Fraternities, 16 each	32

6. The length of time for meals is given in table 6.

TABLE 6.—*Time Taken for Meals in Class of 1927 at Dartmouth*

Eighty Men	Average	Range
Breakfast	12.4 min.	7 to 19
Dinner	15.4 min.	8 to 22
Supper	16.0 min.	8 to 24

7. The average number of calories for twenty-four men was 3,000, with a range from 2,400 to 4,100. The seven men making the best gains and the seven making the poorest gains came within fifty calories of the average for the entire group.

8. In the class of 1928, at Dartmouth, the underweight men not in physical fitness classes who lost weight during the college year averaged 0.6 less in college marks than did those who gained in weight in this time.

For both semesters, the underweight men had twice as many grades of less than 1.0 as the average of all the members of the class, and three times as many as were found in the group ranging from average weight to 10 per cent above the average. In the attainment of grades from 2.5 up, the underweight men were below the average, and the safety weight group ran above the average.

The obese men, 20 per cent or more above average, ran below average in high college marks and above the average in low marks. They showed twice as many low marks and less than a third as many marks of the higher grade as were found in the safety weight group.

In a group of eight men "withdrawn" from college, seven deserved zero in "control" in the physical fitness

classes. Their average "health intelligence quotient" was 43 on a scale of 100. Their average college grade was 0.8. Four of them were in the lowest decile group (10); two were in group 9; one was in 7, and one in 3.

In the class of 1927, in the Massachusetts Institute of Technology, a comparison of grades received in college during the first term and those given by the nutrition worker showed that the ten best in college work had been ranked in the physical fitness class an average of 68 per cent, while the ten lowest in college grades averaged 46 per cent in our class.

The highest seven in college grades made an average gain in weight of 359 per cent; the second seven averaged 299 per cent, and the lowest seven, 225 per cent.

270 Commonwealth Avenue.

LEAD POISONING IN NURSING INFANTS

REPORT OF TWO CASES DUE TO THE USE OF LEAD NIPPLE SHIELDS *

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Lead poisoning in children is well known though not common. Lead poisoning in nursing infants is extremely rare. The previously reported sources of lead poisoning during the nursing age are varied. Congenital lead poisoning is rare. The two cases of Ganyaire [1] and of LeGrand and Winter [1] are undoubtedly authentic, as lead was demonstrated in the placental, hepatic and cerebral tissues of two infants dying in the first days of life. The excretion of lead in the breast milk of mothers poisoned by the use of lead-containing skin cosmetics and hair dyes was the source of lead poisoning in several young infants among the cases recorded by Dufour.[2] Suzuki and Kaneko [3] have recently reported that the long observed serous meningitis in Japanese infants is due to white lead powder used as a cosmetic by young Japanese mothers. One cannot be certain that the nursing infants may not also have sucked lead from the skin or hair of the mothers, or carried it to their mouths on their hands. Lead preparations applied to the breasts of mothers in the treatment of diseased nipples is another recorded source. Bouchet [4] observed poisoning in a 3 months infant, due to the use of a lead lotion on the nipple. Von Hove,[5] Roussel [6] and Holt [7] cite cases in which the nursing infant was poisoned by the application to the breast of an ointment containing lead acetate. Guerbet [8] observed lead poisoning in a 3 months infant secondary to the use of nursing bottles that had had lead incorporated into the glass. Dufour [2] mentioned instances of poisoning due to nursing bottle stoppers, both of metallic lead and of lead-containing rubber, and also from lead frames in which the nursing bottles were held. Medication of the infants' skin by lead plasters and lead dusting powder was the source of poisoning in the cases of Friedman [1] and Stephenson.[1] Veriot and Remy [9] observed lead intoxication in a 12 months infant due to the swallowing of a block of lead printers' type. Inhalation of lead dust, lead paint from a doll and clothing material impregnated with lead are given as sources of lead poisoning in infants of nursing age in the cases of Dufour.[2]

We have not found the use of lead nipple shields by nursing mothers previously demonstrated as a source of lead poisoning in infancy. Two such cases are the subject of this report.

REPORT OF CASES

CASE 1.—*History.*—A girl baby, white, aged 4½ months, was admitted to the Babies' Hospital, Nov. 3, 1923, because of vomiting, failure to gain in weight, and "nervousness," each of approximately one month's duration. The labor had been normal, and the birth weight 6 pounds 12 ounces (3 Kg.). There had been no previous illnesses. The child had gained regularly in weight, until the age of 3½ months, at the onset of the present trouble, when she weighed 12 pounds (5.4 Kg.). The child had been breast fed continuously until the time of admission.

She had vomited persistently during the last month. The vomiting was moderately forceful and occurred from two to three times each day. This was not related to feedings and had never been bilious or blood stained. There had never been abdominal colic.

The general nervousness began approximately simultaneously with the vomiting. The parents first noted that sudden, loud noises unduly upset her and that she became "jumpy after the slamming of doors or the dropping of a dish pan." She also became fretful and restless, particularly at night. She developed head rolling, and the hands, arms and legs were in motion most of the time. Forty-eight hours before admission, rightsided jerky movements began, and twenty-four hours before admission there were generalized twitchings. A slight stupor had been present for twenty-four hours. In the spinal fluid examination twenty-four hours before admission, clear fluid, 60 cells, a trace of globulin and the presence of sugar were reported. No paralysis or convulsions had been seen. She had gained no weight since the onset of the symptoms. The appetite had remained good. The baby had nursed vigorously throughout. The stools were normal in character and frequency.

Physical Examination.—The infant's measurements were: head circumference, 16¼ inches (41 cm.); chest, 15 inches (38 cm.); abdomen, 15 inches, and length, 23½ inches (59.6 cm.). The child lay in a slight stupor. The skin was free from eruption and its turgor good. The subcutaneous panniculus was scanty. There was generalized pallor. The glands were normal. The head was in the normal position without opisthotonos. The anterior fontanel was large, four fingerbreadths in diameter, tense, and definitely bulging. There was no craniotabes. The pupils and pupillary reflexes were normal. There was a bilateral, inconstant, horizontal nystagmus. The right ear drum was slightly congested. Chvostek's sign could not be elicited. The oral mucous membranes were pale without evidence of stomatitis, and a lead line was not visible. The neck was moderately spastic and not tender. Brudzinski's sign was not present. The thorax, abdomen and genitalia were normal. The extremities were spastic, with hyperactive deep reflexes. Positive bilateral Kernig's signs were obtained. Ankle clonus could not be elicited. Tache cérébrale was present. Twitchings of the extremities, reported in the history, were not present.

Electrical reaction was: anodal closing contraction, 3; anodal opening contraction, 10; cathodal closing contraction, 2.4, and cathodal opening contraction, 8.

The Pirquet skin test was negative.

Laboratory Findings.—The spinal fluid was slightly opalescent, with normal pressure, and contained 70 cells (80 per cent polymorphonuclears [?]); the globulin test was ++++;

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* From the Department of the Diseases of Children, Columbia University College of Physicians and Surgeons, and the Babies' Hospital of New York.

1. Quoted by Dufour-Labastide, Thèse de Paris, 1901 and 1902.
2. Dufour-Labastide: Thèse de Paris, 1901 and 1902.
3. Suzuki, T., and Kaneko, J.: Serous Meningitis in Infants from Lead Poisoning, J. Oriental Med. **2**: 55 (Feb.) 1924; abst., J. A. M. A. **82**: 1819 (May 31) 1924.
4. Bouchet: Gaz. d. hôp., 1875.
5. Von Hove: Bull. Soc. méd. de Gand, 1889, p. 131.
6. Roussel: Loire méd., 1898, p. 331.
7. Holt, L. E., Jr.: Lead Poisoning in Infancy, Am. J. Dis. Child. **25**: 229 (March) 1923.
8. Guerbet: Lead Poisoning from Nursing Bottles, Nourrison **6**: 344, 1918.
9. Veriot and Remy: J. de clin. et therap. inf., 1894.

the sugar was 46 mg. per hundred cubic centimeters, and chlorides, 738 mg. per hundred cubic centimeters.

Blood examination showed: hemoglobin, 50 per cent; red blood cells, 2,500,000; white blood cells, 18,600; polymorphonuclears, 48 per cent; lymphocytes, 40 per cent; mononuclears, 2 per cent; eosinophilic polymorphonuclears, 1 per cent, and transitionals, 1 per cent. There was heavy and extensive stippling of the red blood cells. Several stipple cells were seen in each high power field. The urine was normal. The blood Wassermann reaction was negative.

The discovery of the stippled cells suggested lead poisoning. The mother was questioned again, and related that she had worn lead shields on both breasts continuously since the day of the patient's birth. No ointments or lotions had ever been used in conjunction with the shields. Before nursing she had, at times, washed the nipples with boric acid, but "more than half the time" the infant had been put to breast without any cleansing procedure. The mother had been free from symptoms throughout the infant's illness. Several specimens of the maternal blood showed no stippling of the erythrocytes.

Hospital Course.—The baby was weaned and was given potassium iodide, 2 grains (0.13 Gm.), every four hours during the twenty-three days she was in the hospital. There was an almost immediate improvement in the vomiting, which occurred only three times during the three weeks' observation. Excessive movements of the arms, hands, and legs were observed after the first examination. These nervous symptoms gradually subsided, with the exception of a series of convulsions on the eighteenth and nineteenth days after admission. They were associated with the purulent right otitis media and did not recur after myringotomy. The anemia persisted. Stippling of the red blood cells was observed on the seventh, twentieth and twenty-third days. Four later spinal fluid examinations were unsatisfactory, because of the presence of fresh blood in the specimens. The weight remained stationary while the patient was in the hospital. Chemical examination of the feces for lead was positive in one examination. Lead was not demonstrated in the urine or spinal fluid; it was found in the breast milk on two occasions. However, after careful cleansing of the breasts with ammonium acetate, lead could not be detected in the breast milk. We concluded that the lead was not being excreted in the milk, but that its source in the earlier examinations was the skin, and that the lead had contaminated the milk during the manipulation of pumping the breast.

Subsequent Course.—The patient has since been observed frequently, and is now 2½ years of age. The anemia has persisted. The hemoglobin at the thirtieth month is 35 per cent and the red blood cell count is 2,800,000. No stippling of the red cells has been seen since the sixth month, six weeks after the cessation of exposure to the shields. The child is underweight for her age, weighing 26 pounds (11.8 Kg.). Mentally she is normal. There is no evidence of foot drop or wrist drop.

CASE 2.—*History.* A girl baby, aged 9 months, was seen in the outpatient department of the Babies' Hospital, Oct. 1, 1925, with a history of vomiting since the seventh month, pallor, and loss of weight since the seventh and a half month. The delivery had been normal, and the birth weight was 6 pounds 7 ounces (2.9 Kg.). There had been no previous illnesses. She had been fed exclusively from the breast, and had registered a regular gain in weight, reaching a maximum of 16 pounds (7.3 Kg.) at 7½ months. The growth and development had been normal. The head was held up at the fourth month, and she had manifested normal muscle power generally. Persistent vomiting had been present since the seventh month. It came on while the infant was still making a satisfactory gain in weight. It had had no relation to the taking of food, had been forceful, and had occurred two or three times each day. Neither bile nor blood had been seen in the vomitus. There had been no abdominal colic. The baby had had moderate constipation. The appetite had remained excellent. A pallor had been present for one and a half months. Previously, the baby's color was good. Since the onset of these symptoms, there had been a notable change in the mental attitude, which had consisted of a lessened tendency for the child to smile and play as she had done previously. She had remained quietly on her back most of the time with little interest in her surroundings. There had been no real stupor or convulsions. She had lost 2 pounds (0.9 Kg.) in the last six weeks.

The case was considered one of gastric indigestion due to improper nursing. Attempts to correct these symptoms by a regular regimen and instructions to the mother in correct nursing were not successful. After one month's observation, further questioning revealed that the mother had begun the use of lead nipple shields when the baby was 1 month old, and had worn them constantly since that time. There had been no medication of the nipples except cleansing them before each nursing with pledgets of cotton soaked in boric acid. The mother has had no symptoms suggestive of lead intoxication. The infant was admitted to the Babies' Hospital, Nov. 4, 1925, for confirmation of a provisional diagnosis of lead poisoning by Dr. C. A. Lang.

Physical Examination.—The infant's measurements were: head circumference, 17½ inches (43.8 cm.); chest, 15¼ inches (38 cm.); abdomen, 15¼ inches, and length, 26½ inches (67 cm.). The patient, aged 10 months, was poorly nourished, with a marked pallor. The palpebral fissures were widened, giving a staring facies. There were frequent quick grimaces. She lay on her back, apparently in no pain and without opisthotonos. The head was continually rolling from side to side. There were frequent clutching movements of the hands, and continual pronation and supination of the forearms, and jerky movements of the legs and feet. The anterior fontanel was 2 cm. in diameter, flat, and of normal tension. There was no craniotabes. The pupillary reflexes and the extra-ocular movements were normal. The mucous membranes of the mouth were clean; there was no stomatitis, and a lead line could not be made out in the gums. Chvostek's sign was not present. The neck was slightly spastic without tenderness. Brudzinski's sign was not present. The heart and lungs were normal. There was no abdominal tenderness. The liver was two fingerbreadths below the costal margin; the spleen was barely palpable. Tache cérébrale was not made out. There were frequent twitching and jerky movements in the extremities, as mentioned above, with moderate spasticity. The deep reflexes were exaggerated throughout. Kernig's sign was not present, and there was no ankle clonus. Trousseau's sign was not present. There was no tenderness of the nerve trunks, nor evidence of wrist and foot drop.

Blood Findings in Case 2

Day After Cessation of Exposure	Hemoglobin, per Cent	Red Blood Cells, per Cubic Millimeter	White Blood Cells, per Cubic Millimeter	Polymorphonuclears, per Cent	Lymphocytes, per Cent	Mononuclears, per Cent	Transitionals, per Cent	Nucleated Red Cells to 100 W. B. C.	Stippled Cells per Cubic Millimeter	Platelets
3d	45	2,900,000	16,000	58	35	3	3	16	70,000	300,000
7th	25	2,500,000	12,000	56	42	2	0	3	++++	230,000
13th	45	3,000,000	8,000	41	48	0	3	2	23,000	290,000
17th	45	2,700,000	10,000	49	43	3	5	0	3,000	170,000
20th	45	3,000,000	9,000	47	50	2	1	0	3,100	220,000
24th	45	2,900,000	15,000	62	36	1	1	0	2,300	190,000
27th	50	2,600,000	9,000	67	30	1	2	0	0	190,000
35th	50	3,400,000	14,000	46	45	5	4	2	0	250,000

Laboratory Findings.—Blood examination showed: hemoglobin, 45 per cent; red blood cells, 3,300,000; white blood cells, 18,000; platelets, 300,000; polymorphonuclears, 51 per cent; lymphocytes, 44 per cent; mononuclears, 5 per cent; transitionals, 2 per cent; nucleated red cells, 19 per hundred leukocytes. There was frequent stippling of the red cells (73,000 per cubic millimeter). The spinal fluid was clear with normal pressure, and contained: 60 cells (65 per cent lymphocytes); globulin + +; sugar, 78 mg. per hundred cubic centimeters (blood sugar, 103 mg.), and chlorides, 625 mg. per hundred cubic centimeters. The blood calcium

was 11.1 mg. per hundred cubic centimeters. The blood phosphorus was 6.3 per hundred cubic centimeters. The urine was normal.

Subsequent Course.—The patient was under observation for a period of six weeks. She was weaned and given phenobarbital and sodium bromide by mouth. The frequency of the vomiting diminished almost immediately, averaging once every other day during the first two weeks, with complete cessation thereafter. She began to gain weight immediately, making a total gain of 2 pounds 6 ounces (1 Kg.) in six weeks. The jerky movements of the extremities, and the head rolling subsided gradually. There was only slight irritability after six weeks. The spinal fluid was normal on the twenty-fourth day.

Further spinal fluid examination the sixth day after admission showed: slight xanthochromia; normal pressure, 34 cells (90 per cent lymphocytes); globulin + +; sugar, 77 mg. per hundred cubic centimeters, and chlorides, 675 mg. per hundred cubic centimeters. The eighth day after admission, the fluid was clear, with normal pressure, and contained 26 cells (75 per cent lymphocytes); globulin + + +; sugar was present qualitatively. The twenty-fourth day after admission, examination showed: clear fluid; normal pressure; 4 cells; globulin, 0; sugar, 55 mg. per hundred cubic centimeters, and chloride, 700 mg. per hundred cubic centimeters.

It is noteworthy that the pleocytosis, the increased globulin, increased sugar and decreased chlorides returned to normal twenty-four days after the cessation of exposure to lead. There was no similar improvement in the anemia, as shown in the accompanying table. The rapid diminuation of the stippled cells and their disappearance on the twenty-fourth day is notable. Also the high nucleated red counts in the admission blood smear and on the third day are interesting. No stippled cells of the mother's erythrocytes were seen in several specimens.

Tests of hemolysis of the blood cells in hypotonic saline solution were done on the fifth and twenty-fifth days after admission. The test on the fifth day showed a moderately increased resistance to hemolysis in saline solution, while on the twenty-fifth day the hemolysis was identical with the control. The first finding is consistent with the observation of Aub and his co-workers.[10] The tests of hemolysis in the saline solution showed:

Fifth day after admission:
- Control: Initial hemolysis, 0.45 per cent sodium chloride; complete hemolysis, 0.35 per cent.
- Patient: Initial hemolysis, 0.45 per cent sodium chloride; complete hemolysis, 0.20 per cent.

Twenty-fifth day after admission:
- Control: Initial hemolysis, 0.45 per cent sodium chloride; complete hemolysis, 0.225.
- Patient: Initial hemolysis, 0.40 per cent sodium chloride; complete hemolysis, 0.225.

Chemical examination of the excreta showed 0.224 mg. of lead in the 2,560 cc. of urine collected in the interval between the tenth and the twenty-sixth days; 2.85 mg. of lead in the 65.5 Gm. of feces collected in the interval between the tenth and the twenty-sixth days.

The breast milk was negative for lead at several examinations.

COMMENT

The use of the lead shields on the maternal breast is the only tenable source of lead intoxication in our cases. The late onset excludes congenital poisoning. Excretion of lead in the breast milk is not probable in view of the negative chemical examinations of the milk, the absence of stippling in the maternal erythrocytes and of saturnism in the mothers, and the failure of the history to establish such sources as suspicious cosmetics and hair dye. Neither infant was fed from nursing bottles. Lotions and ointments were not used on the breasts in conjunction with the breast shields. Neither infant received treatment with lead-containing plaster or dusting powder. Careful questioning failed to reveal any source suggestive of lead toys, inhalation of lead dust, lead impregnated clothing, or of lead foreign bodies in the stomach.

The clinical picture in both cases was that of vomiting, meningeal irritation and anemia. Clinically, these symptoms had no characteristics sufficiently distinctive to differentiate them from like symptoms in more common diseases. There was no clinical evidence that the vomiting in these cases was different from that seen in gastric indigestion; the nervous irritability clinically was indistinguishable from the meningeal irritation seen in other forms of meningitis and meningo-encephalitis; the anemia was identical, clinically, with anemias secondary to chronic disease and malnutrition. None of the manifestations in the classic lead triad were present—colic, palsy and the presence of a lead line in the gingival mucous membranes. This suggests that, in nursing infants, lead poisoning is probably too seldom considered as a diagnostic possibility when such common symptoms as vomiting, general nervousness and anemia constitute the clinical picture. The history of a source of lead, basophilic degeneration of the red blood cells, the changes in the spinal fluid, and the chemical detection of lead in the excreta were the most valuable aids and the final proofs in the diagnosis of lead poisoning in our cases.

The presence of lead in the feces of both patients demonstrates that lead in appreciable quantities may be ingested by infants suckling breasts which have been exposed to lead shields. The detection of lead in the urine in case 2 is absolute evidence that after ingestion from this source lead can be absorbed into the blood stream[10] and, in our cases, in sufficient amounts to affect the blood and to cause changes in the spinal fluid. These findings warrant the conclusion that lead poisoning in both patients was caused by the use of lead nipple shields.

Personal communication with obstetricians in New York testifies that the lead nipple shield is a commonly employed therapeutic measure in both dispensary and private practice. The duration of the use of the shields is usually less than one month, and a careful washing of the nipples previous to each nursing is advised. Under such conditions, there has been apparently no intoxication in the nurslings. In our cases the period of exposure to lead was several months—in case 1, three and a half months, and in case 2, six and a half months. The first mother was negligent in washing her nipples. The most important factors in the development of lead poisoning from the use of the shields are probably the length of exposure, the care of the nipples previous to nursing, the vigor of the sucking movements of the infant, and perhaps the individual susceptibility to lead which was noted by the Australian observers in older children.[11]

There is no indication in our cases that the use of lead shields for two or three weeks can cause lead intoxication. However, our cases do demonstrate that the lead nipple shield is a definite source of danger to the nursing infant if used for longer periods, and that, if the control of the mothers by the physician is not sufficient to insure the discontinuance of the shields after a few weeks, other therapeutic measures should be used in the treatment of the diseased nipples.

39 East Seventy-Fifth Street.

10. Aub, Fairhall, Minot and Resnikoff: Lead Poisoning, Medicine **4**, nos. 1 and 2.

11. Bunl and Young: Ann. Trop. Med. **8**: 575, 1914-1915.

Clinical Notes, Suggestions, and New Instruments

FIXATION OF FRACTURES OF THE CLAVICLE: ANOTHER METHOD

J. E. M. THOMSON, M.D., LINCOLN, NEB.

My object here is to describe a technic of applying fixation to fractures of the clavicle, using old and well tried principles, with especial reference to fractures of the outer third of the clavicle.

Most textbooks on fractures deal lightly with the possibilities and prognosis of fractures of the clavicle. Alinement and apposition, according to various writers, mean little to the ultimate outcome of the case. The primary object of all fixation is to hold the shoulder of the affected side well back and up. The T splint, cross or barrel stay application of fixation offers an excellent medium for holding these fragments. However, in my experience most of these fractures have been in men, and it has been extremely difficult to keep the splints in proper position. They demand constant attention and adjusting. In several instances, satisfactory position of the fragments has been lost to a certain extent by loosening of the bandages or straps during the first few days after their application.

It is true that fractures near the sternal articulation of the clavicle are not likely to cause any appreciable disability,

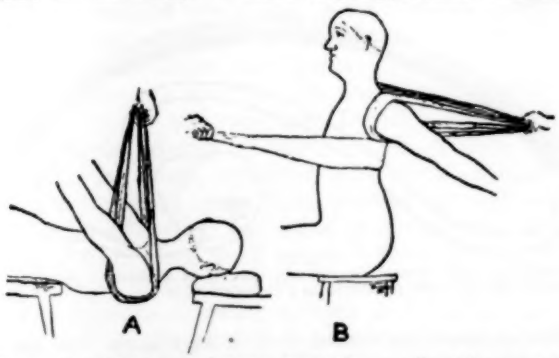

Fig. 1.—*A*, patient swung between two tables, muslin strips supporting the shoulders and held over head by assistant, the arms held well back and up; *B*, patient sitting, muslin straps over shoulders held from behind by assistant, countertraction maintained by muslin strap high up across back and held in front while the arms are held well back and up.

provided the fragments do not injure the underlying soft tissues. However, our attention has been attracted to the severe shoulder disabilities resulting from fractures of the outer end of the clavicle, particularly those near the scapular articulation which have not been adequately reduced and immobilized. Such fractures are often seen complicated by dislocations of the head of the humerus, separations and dislocations of the acromioclavicular articulation, fractures of the scapula, and injuries of the glenoid cavity and shoulder joint. In my experience, nearly all fractures of the outer third of the clavicle are associated with injuries about the glenoid cavity, and there is always an abnormal mobility in the acromioclavicular articulation.

The common disability that results from the improper treatment of the latter type of fracture of the clavicle consists of painful abduction of the arm from the body, and limitation of movement forward of the humerus and backward when the patient attempts to put the arm behind him. Often very vigorous physiotherapy does not entirely relieve the symptoms, and permanent disability develops.

It has been my practice in the treatment of fractures of the clavicle to pad the shoulders and the axilla with the figure-of-eight sheet wadding bandage. The patient seated, if general anesthetic is not necessary, or on his face swung between two tables as illustrated, should an anesthetic be needed, with muslin bandages across the front of the shoulders and held from behind or above as the case may be, sitting or lying, the arms abducted up and backward.

When the patient is sitting, a counter traction is made by muslin bandages across the back up high and held by an assistant in front of the patient. However, when the patient is lying down the weight of the body is sufficient countertraction for ordinary reduction of the fracture.

After the sheet wadding bandage has been applied over both shoulders, a light plaster-of-paris figure-of-eight cast is applied to both shoulders and about the chest. This can

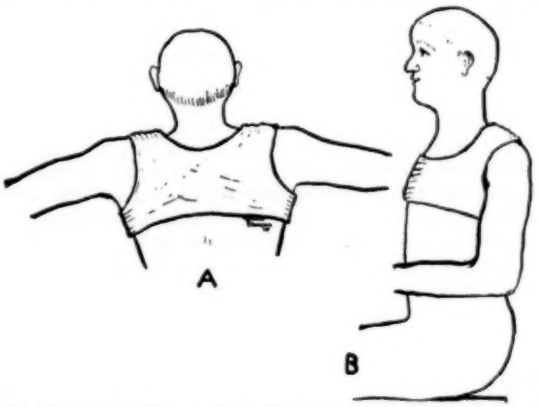

Fig. 2.—Figure-of-eight cast applied: *A*, seen from rear; *B*, from side.

be cut out considerably without weakening the fixing power of the cast.

When the fracture of the clavicle is in the outer third, the plaster-of-paris cast is extended down over the chest, embracing the entire trunk. The arm on the affected side is held well back and embedded in the plaster, forming a body and arm spica with the arm at 90 degrees of abduction, with the body and forearm flexed to an angle of 90 degrees with the arm and in the same plane, held in supination, the hand in dorsiflexion.

In the figure-of-eight plaster cast the patient has full freedom of the arms without jeopardizing the possibility of losing the position of the fragments. If the fragments are not in sufficiently satisfactory alinement, through an opening in the cast, direct leverage of the fragments with a small instrument can be accomplished to bring the desired position, or open operation if deemed necessary may be performed. Such procedures, however, are seldom necessary.

At the end of four weeks the cast is removed, and a muslin bandage reenforced with adhesive plaster will often be enough immobilization until the patient is ready to be relieved from all fixation devices.

Fig. 3.—Body and arm spica used in cases of fracture of the clavicle in the outer third with injury to the shoulder joint; the top portion of the arm cast has been taken off, that physiotherapy may be instituted.

In those cases in which the fracture is of the outer end of the clavicle, the arm and the body are placed in a spica. The upper part of the arm cast is removed at the end of two and one-half weeks, and massage, manipulation and physiotherapy are instituted for the arm and shoulder joint, the arm always being left in the well abducted position. At the end of four weeks the entire cast is removed and physiotherapy is continued, the muslin bandage reenforced with adhesive plaster being the only limiting feature to the shoulder region for another week or so.

When this method is followed, the shoulder joint has an opportunity to heal as well as the fracture fragments, and there is not the long period of painful shoulder disabilities that are found so often in cases referred to us after having been treated by other methods of fixation.

I have had one patient who was a football player and who, after the second week in his figure-of-eight plaster cast, continued the major part of his practice and was used after the third week in a game without injury to the position of the fragments; but such strenuous testing of the fates is not desirable, even in a cast.

223 First National Bank Building

BILATERAL GONORRHEAL SALPINGITIS IN A CHILD THREE DAYS AFTER INITIAL INFECTION

MINAS JOANNIDES, M.D., CHICAGO

This case is reported because it presents the following important features: A girl, aged 6½ years, was infected innocently by a careless mother; the disease spread into the tubes and the pelvic peritoneum within three days after the initial infection, and the child recovered after double salpingectomy and appendectomy with drainage.

The child was living at home when the mother was infected with gonorrheal vaginitis and endocervitis. Although the mother was warned against careless handling of her three girls and two boys, ranging between the ages of 3 and 10 years, this child did not escape. She had a strong desire to urinate when at school, but the teacher did not allow her to go out of the room, with the consequent result that she soiled herself. Ever since babyhood, she had had poor control of her bladder sphincter. On going home she was cleaned by the mother, who had just previously taken a local treatment at home and forgot to use an antiseptic for her hands. On the following day the girl noticed a discharge from the vagina, but the mother paid no attention to it. Two days later the girl became very sick, with fever ranging at the level of 103 F. There were vomiting, pain in the abdomen, and a very profuse vaginal discharge.

When seen, the child had bilateral rigidity in both lower quadrants, there being more rigidity on the right side and over the appendix. She had severe nausea and vomiting. There was a thick purulent vaginal and urethral discharge. The pulse ranged between 140 and 160 a minute. She was immediately taken to the Deaconess Hospital in Minneapolis, where she was placed in the Fowler position, with cold applications over the lower part of the abdomen. During the night the child's pulse began to get thready, and the temperature persisted at its previous high level. By 5 o'clock the next morning, the child was moribund, and in order to lessen the responsibility on myself, Dr. C. A. Witham was also called to see her. He concurred with my decision for immediate laparotomy, in spite of her critical condition. Under ether anesthesia, a midline incision was made from the pubis to the umbilicus. On opening the abdomen, I noticed some serous fluid in the pelvis but no tendency to any adhesive reaction as yet. The peritoneum as well as the uterus and tubes and also the appendix presented a fiery red injection, as if there was a beginning gangrene of the organs. There were no adhesions between the appendix and the neighboring viscera. There was a thin purulent discharge that could be squeezed out of the tubes when the latter were handled. Both the tubes were removed, along with the appendix. The ovaries were not sacrificed in the hope that, though involved, they might offer more help by their internal secretion than harm by their inflammation. A hurried closure was made after ample drainage had been established.

The child had a stormy postoperative course for the first two days, but by the third day the temperature had dropped to 99.8 F., and remained along that level until she was discharged from the hospital seventeen days after operation. There was a profuse discharge of pus from the wound, which was irrigated daily with mercurochrome-220 soluble (2 per cent watery solution). Vaginal instillations were given also twice daily. No sinus was present four weeks after the operation, although there was a small granulating wound about 25 mm. in diameter at the time when last seen. The vaginal discharge became minimal, but the instillations of mercurochrome solution were continued daily till the child had no more discharge. Fortunately, the rest of the children were normal on repeated examinations.

The lessons from this case are clear: We must emphasize to the infected parents the dangers of infection in the children. With the removal of the tubes and the infected appendix, it was easy to cure the child by establishing ample drainage and giving antiseptic therapy.

3741 Broadway.

A NEW INSTRUMENT FOR THE INTRODUCTION OF HEMOSTATIC BAGS IN SUPRAPUBIC PROSTATECTOMY

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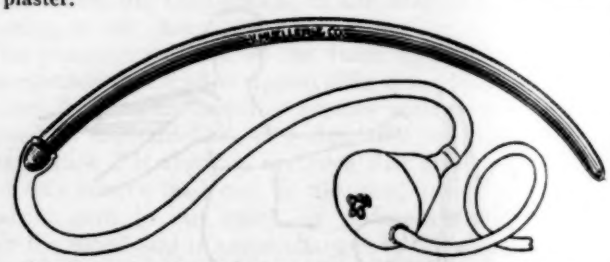
Attending Urologist, Cincinnati General Hospital and Jewish Hospital

The control of hemorrhage following the removal of a prostatic adenoma by either the perineal or the suprapubic approach is the anxious concern of every operator. The popularity of the hemostatic bags of either the Hagner or Pilcher model attests their effectiveness. The use of these bags is almost entirely confined to those who remove the prostatic obstruction suprapubically.

The bladder is opened by median section, the adenoma removed by blunt dissection. A special sound with a Benique curve and a notched tip is then introduced through the urethra into the bladder and the bag threaded onto the tip of the sound. The rubber may or may not be held to the sound by means of a ligature. The sound is then slowly withdrawn through the urethra, pulling the bag down into the cavity left by the removal of the adenoma. The bag is inflated with fluid or air and held in place by means of adhesive plaster.



Sound for the retrograde introduction of a hemostatic bag into the prostatic cavity, with a Pilcher bag fastened to it.

This is about the method used in most cases. We have at times experienced considerable difficulty in maintaining a rigid aseptic technic during the introduction of the sound through the urethra. We have also felt that the passage of the sound through the urethra, which is seldom sterile, into the raw cavity from which the prostatic adenoma was removed may be the means of introducing fresh infection into the denuded area in the bladder and prostatic urethra. To overcome these objections and facilitate the introduction of the various types of hemostatic bags, the special sound here presented was designed. A number of different shapes, curves and sizes were tried out before one was found to be satisfactory.

The instrument is a one-fourth segment of the diameter of a circle about 14 inches in diameter. In calliber it is a no. 23 F. with a special tip no. 17 F. over which the bag is threaded. The opposite end is rounded and tapered for ease of introduction into the urethra. After the enucleation of the prostatic obstruction, the bag is threaded on the tip and the rounded opposite end of the sound inserted through the bladder and the prostatic cavity into the urethra. The sound is pushed on through the urethra and out the meatus, carrying the bag into the prostatic cavity. Occasionally the procedure is varied by introducing the sound into the urethra retrograde from the bladder, and while it is in place enucleating the prostate from around it.

By either of these methods the unsurgical procedure of introducing a sound through the urethra into the raw prostatic cavity is done away with and the danger of infection lessened.

The instrument was made by V. Mueller & Company after a number of experimental models were tried out.

By the use of this sound retrograde we have been able to maintain a better aseptic technic and introduce the bag with greater facility than by the use of the older type sound.

The Doctors Building.

Special Articles

RELIGIOUS HEALING

PRELIMINARY REPORT *

ALICE E. PAULSEN, PH.D.
NEW YORK

In ancient times the practice of healing was carried on by the priesthood. It was a recognized function of religious procedure, and history supplies us with amusing accounts of the queer charms, incantations and magical practices of every conceivable sort that were part of the stock in trade of the healers of those days. Such practices survive to this day among primitive peoples.

Though the early Egyptians had some knowledge of anatomy and must have known something about hygienic methods, the separation of medicine from religion and magic did not occur until the fourth century before Christ. Hippocrates, the father of modern medicine, was a product of the comparatively highly cultured Greek civilization, which made bodily perfection and health ideals in themselves.

Modern medicine itself has gone through endless changes. When we think of the numberless remedies that have been heralded, assiduously applied and later proved worthless, in spite of their one-time reputability and popularity, we are sometimes forced to the conclusion that in the history of medicine there have been many practices, which, whatever they accomplished or failed to accomplish, must have worked through suggestion and not through any intrinsic therapeutic value. They take their place with magic. Nevertheless, the steady increase in the body of medical knowledge has tended to separate medicine further and further from religion, until at the present time we are scarcely able to trace the earlier close connection.

Psychotherapy is demonstrating the need for a more thoughtful consideration of Plato's ideal "mens sana in corpore sano" in the treatment of all disease conditions, and in a general way the interrelation of mind and body is recognized. But with regard to religion, a most vital aspect of mental life, opinion is decidedly divided.

A part of this particular study included gathering opinion, from a more or less unselected group of physicians, concerning the value of religion as a therapeutic agent as judged by their experience with it in practice. Comparatively few had found it practical or had had sufficient experience to warrant expressing an opinion. Of those who had had experience with it, some reported favorably, some unfavorably. The same was true in the case of those who expressed opinions on the basis of a theoretical consideration of the question.

Yet Plato's "mens sana" apparently meant something more than a "sound mind" as it is commonly translated, and as psychotherapy ordinarily interprets it. He[1] says: "The office of the physician extends equally to the purification of mind and body. To neglect the one is to expose the other to evident peril. It is not only the body which, by sound constitution strengthens the *soul*, but the well regulated *soul*, by its authoritative power, maintains the body in perfect health."

Today, medicine freed from the church appears to have left the care of this much disputed soul of man to the care of theology. Theology on its part has made little of the body. As a matter of fact, for about 1,500 years the church and its authorities were a hindrance to the progress of science in general. Christ emphasized healing of the body in his ministry, but, during the middle ages especially, his followers became so perverted in their thought that they brought about untold damage to the healing art, at a most important period of its development, through their tragic undervaluation of bodily welfare and overestimation of spiritual values.

The church, however, has gone through radical changes since that time. There are those who believe that even now it is experiencing a sort of continuous and gradual revolution, destined to emerge with a reversal of its former attitude toward science. Instead of looking on it as a rival, the church is beginning to welcome science as an ally and is seeking its aid in solving the problems that confront organized religion today.

Science, on the other hand, is said to be becoming less material, less convinced that the universe can ultimately be explained in terms of matter, and more ready to enter speculative fields.

As problems become mutual, all tend to meet in the course of their search for truth. And so it is with medicine and religion in relation to the present problem. We are not concerned with the differences between religion and science, the science or art of medicine in particular, but with what each can contribute to an impartial investigation of a mutual problem, namely, the relation of religion and health, as demonstrated in certain modern religious-therapeutic practices.

In order to comprehend the situation fully it is necessary first to consider the theories and practices involved in the activities of certain cults, not within the church, which include healing in their purpose and give their systems a religious setting.

Then we must consider the work of individuals and institutions not especially organized for religious work but making religion an essential element in the methods they use to readjust patients of various types who are under their care for that purpose.

We come finally to a consideration of work within the churches. This includes organized efforts to introduce healing as a function of religion, less direct efforts at religious therapy on the part of individual members of the clergy, and certain types of medical work carried on in established relationships between clergymen and physicians. To complete the picture, we call attention also to health work along more ordinary lines and the general facilities available for health work in churches.

The problem is of such complexity that it will be fully comprehended only through a most intensive study carried on with mutual understanding, mutual cooperation and mutual desire to solve the questions involved. This is a matter for the future. Under the circumstances, the present study constitutes only a preliminary survey of the field, and my purpose in this paper is merely to indicate the scope of the problem, to formulate conclusions so far as conclusions can be formulated at this stage, and to present what material I have been able to glean, as a basis for the formation of adequate plans for a more adequate investigation of the entire situation. Subsequent papers will report the results of further study.

The survey has served to establish the fact that the problem is very great and that it will repay further

* Prepared under the auspices of the Committee on Public Health Relations of the New York Academy of Medicine.

1. Plato, quoted by Atkins, G. G.: Modern Religious Cults and Movements, New York, Fleming H. Revell Company, 1923, p. 98.

investigation both because of its possibilities for good and on account of the obvious necessity of preventing evil developments. Since the movement is world wide, it was necessary to localize this particular survey in order to make it practical. It has therefore been confined largely to movements that have active centers in New York. A perusal of the literature on the subject will readily verify the fact that what is reported here is typical of what may be found throughout the country.

Its importance may be judged from the fact that the Church of England, after a study of the problems presented by the religious healing movement, carried on over a period of three years, has appointed a permanent committee of prominent physicians, clergymen and psychologists to act in an advisory capacity to the church with regard to the matter, and in America the Episcopal Church has also appointed an advisory committee consisting of physicians, clergymen and laymen. There is no doubt that the movement is on, and on in earnest.

INDEPENDENT MOVEMENTS

CHRISTIAN SCIENCE

The most highly organized modern "faith cure" movement is admittedly Christian Science. This cult is said to comprise about 1,500,000 members. According to the statistics published in the *Christian Science Sentinel*[2] following the annual convention of the Christian Science church in June, 1925, the work founded by Mrs. Mary Baker G. Eddy, about 1870, is now being carried on by 7,220 recognized practitioners. Efforts are being made to secure nurses who will pledge themselves to faithful cooperation with practitioners, and there are now 216 on register. In the course of the year, 1,600 patients were treated at the newly established Christian Science sanatorium.

During the year, 3,257 public lectures on the teachings of Christian Science were given. Of these, 312 were given in foreign fields. The total public attendance at these lectures was 2,580,160 people.

The yearly receipts of the mother church were $1,075,496.33. Besides this there were gifts to the "special fund" amounting to $468,218.89; to the "relief fund," $202,103.07; to the "benevolent fund," $430,384.98, and to the "permanent fund," $17,868.08. So firmly is this movement established, both financially and in numbers, that its authorities were able to obtain property for it in the vicinity of the mother church in Boston valued at $1,305,755.47 with only $200,000 invested in cash.

Christian Science is primarily occupied with the problem of treatment. Students of philosophy and of religion harshly criticize the philosophical and religious setting which has been given to Mrs. Eddy's theories and do not recognize Christian Science either as a philosophy or as a religion.

In 1862, Mrs. Eddy, a confirmed neuropath,[3] who had been a more or less helpless invalid since her early childhood, went to Portland, Maine, to consult one Phineas Parkhurst Quimby, who, though only a watchmaker by trade, had built up a rather elaborate "mind cure" based on the theories held by the French "animal magnetists" of that time. Quimby's interest in these matters was aroused by the lectures and teachings of a magnetizer named Charles Poyen, who visited the United States about 1840.

After a few treatments by "Dr." Quimby, Mrs. Eddy appeared to be completely well. She was convinced that he had cured her of paralysis which, she believed, had been due to a lesion of the spinal cord. Following her cure she devoted herself to the study of Quimby's methods and teachings, and Christian Science is the outcome of her study. Her first publication was copyrighted in 1870, and in 1875 she published "Science and Health," which contains the authoritative creed of the organization. "Science and Health with Key to the Scriptures" is the complete title of this book as it now appears. Mrs. Eddy devoted the rest of her life, until her death in 1910, to the advancement of Christian Science through her writings.

Certain other students of Quimby accused the founder of Christian Science of having deliberately stolen the material for her own publications from some of their teacher's unpublished manuscripts with which she was familiar. These, like Mrs. Eddy's, were curious mixtures of ideas gleaned from the Scriptures, spiritualism, clairvoyance, treatises on disease, happiness, wisdom, science and the arts. Mrs. Eddy indignantly denied any plagiarism, and, apparently quite unmindful of the now accepted theories concerning such phenomena, claimed that her work was more than original in that it was accomplished by divine inspiration, some of it produced by automatic writing.

The main tenets of her teachings are to be found in "Science and Health with Key to the Scriptures." The basic maxims are:[4]

1. God is All-in-all.
2. God is good. Good is Mind.
3. God, Spirit, being all, nothing is matter.

To the Christian Scientist, "matter is nothing beyond an image of mortal mind." "Disease, death, evil, sin deny good, omnipotent God, Life." Nothing is real and eternal, nothing is Spirit, but God and His idea. "Evil has no reality . . . it is simply a belief, an illusion of material sense."[5] Sickness is "error."

The "scientist" treats himself with these thoughts. He believes that pessimism leads to weakness, optimism to power. If he is ill, his self-treatment consists in dwelling on those parts of Mrs. Eddy's teachings which are appropriate for his condition, devoting his entire conscious activity or passively giving himself up to steadfast denial of the reality of the "error" to which he may temporarily be subjected. This is varied with prayer, audibly expressed or silent, and affirmations of goodness.

If unable to treat himself, he calls on a practitioner, who may help him either by absent or personal treatment. Absent treatment does not require that the practitioner shall see the patient. He may be appraised of the patient's need by telephone, telegraph or other communication, and carries on treatment wherever he may be. Some practitioners and some patients state that they are so *en rapport* that no material communication is necessary to appraise the practitioner of the patient's need, and the patient as through telepathy becomes aware that the practitioner is meeting his need. The patient need merely place himself in a receptive attitude, and healing will follow as a matter of course.

When the practitioner treats a patient in person, efforts are made first to bring about the proper attitude of mind in each. The practitioner directs his efforts toward placing the patient *en rapport* with and under the control of the Divine Mind. All else must be banished from his mind. The patient must relax and

2. Christian Science Sentinel, June 13, 1925.
3. Janet, Pierre: Psychological Healing, translated by Eden and Cedar Paul, New York, the Macmillan Company 1: 55 ff., 1925.
4. Science and Health, p. 113, lines 16, 17 and 18.
5. Quotations from Science and Health with Key to the Scriptures.

banish all fear and misgiving, expect to be healed and maintain a passive receptive attitude.

This attitude is brought about largely by persuasion in the case of new patients, but the adept is trained to assume it with little difficulty. Treatment proper consists of reading or quoting suitable passages from Mrs. Eddy's writings, meditations, repeated denial of the reality of the patient's symptoms if he is being treated for health, with affirmations of health, perfection, goodness and suitable prayers. The treatment may be silent, audible or partly silent and partly audible, and may vary in length of time from a few moments to several hours. The fee for service is as a rule on the basis of free will offering, with a tacit understanding that it shall be in proportion to the patient's means and the service rendered.

No medical help is permitted beyond attention to ordinary hygienic measures, and in her earlier teachings Mrs. Eddy deliberately enjoined against even these. A practitioner is not permitted to treat a case unless the patient has chosen between his ministrations and those of the medical practitioner. Most practitioners demand that the patient himself shall desire and ask for his services, but some still consent to attempt winning the individual at the request of others interested in him, however resistive the patient himself may be at first.

For no ailment is definite diagnosis previous to treatment considered necessary, nor is evidence of cure demanded beyond the patient's testimony. To avoid difficulty from the legal point of view, a physician is called in if death appears imminent. Christian Science practitioners are not required to have medical training, nor is there an academic requirement of any sort, beyond the acquisition of certain foundations in the technic of Christian Science treatment and personal qualifications satisfactory to the Christian Science authorities, by which they are officially recognized.

The Christian Scientist places great emphasis on the effect of suggestion in general. He has an almost superstitious abhorrence of any negative thought, making a practice of banishing at once every idea of disease, misfortune, unhappiness or "error" of any sort. He does not wish people even to mention them in his presence. He endeavors to create for himself a cheerful, pleasant, happy environment and to think only positive, constructive thoughts. The practitioner makes a point of demanding a cheerful atmosphere and the creation of "harmony" in the sickroom.

Besides attending their regular church services on Sunday, treating themselves or taking treatment from practitioners when in "error" of one kind or another, attending midweek experience meetings at which they may bear public witness to the help they have received through the application of Christian Science in the pursuit of health, wealth and happiness, the followers of Mrs. Eddy, if they are faithful, spend time in the daily study of her "word." A daily lesson based on the study of Science and Health with Key to the Scriptures is provided for this purpose.

A well organized bureau supervises the publication of Christian Science literature. Lectures and other publicity are carefully planned. Two publications edited with Christian Science principles in mind, the *Christian Science Monitor*, a daily newspaper, regarded by many as one of the best dailies in the country, and a weekly, the *Christian Science Sentinel*, have a wide circulation among the general public.

JEWISH SCIENCE

Similar to Christian Science, but of more recent origin, is Jewish Science,[6] founded by Rabbi Morris Lichtenstein. New York has several active Jewish Science centers, including a prayer clinic.

"Jewish Science prayers," says Rabbi Lichtenstein, in "Jewish Science and Health," "are always answered." Further quotations from the same source make clear the similarity between this cult and others of the same nature. The methods advocated are typical.

How to Pray.—"The Divine Mind communicates with the human mind through the imagination. . . .

"A prayer therefore should be offered in the form of a mental image. Man must visualize the thing he desires, he must use his imaginative powers to form his petition in terms clearly outlined in his own mind. The profound concentration of attention and thought which this form of prayer requires fills also the heart with deep earnestness and devotion. Man must pray whole heartedly as well as whole mindedly; he must believe in his heart that his well being depends completely upon his prayer.

"In these mental prayers there should never be formed any negative images . . . one should see with his mental vision only the state in which he desires to be . . . he must keep the image alive and fresh, which means that this image prayer must be frequently repeated, each time with greater clearness and with deeper devotion. The mind . . . must be free from doubt and hesitation and should sincerely expect a response to its supplication. The answer will not fail to come.

"One must first of all put himself into a calm state of mind . . . must free himself of all distressing thought and unpleasant feeling . . . become serene and thus attuned to the Divine Mind. Serenity cannot be achieved without bodily relaxation. Therefore one should relax completely, put himself perfectly at ease, feel no discomfort, then close his eyes and offer his prayer with the imagination. Gradually and with concentrated effort, the mind will succeed in presenting its prayer.

"Should the petitioner find himself unable to visualize his supplication, he may bring words to his assistance and offer his petition in the form of an affirmation. An affirmation is a prayer offered to the Divine Mind in affirmative terms. When one suffers from unhappiness, he affirms.

" 'The Divine Mind in me expresses itself in happiness.' When one is steeped in despondency he affirms. 'I am filled with Divine hope and cheer.' In this as in the other method of prayer—that of the mental image—the mind of the supplicant must be attuned to the mood of the Divine Mind. . . .

"In both methods of prayer, the visualized and the affirmative, the supplicant must realize fully that he is declaring his desires to the Divine Mind and that his prayer will always be fulfilled. . . ."

Healing.—"The greatest gift in man's possession is health. . . . Because health is natural to man he need not exert himself to attain it; he need have only a care to preserve it. Health can best be preserved and life prolonged by following faithfully the precepts of Jewish Science. We say: 'Live serenely . . . avoid unwholesome excitement . . . live peacefully, and avoid anger . . . live cheerfully, avoid morose-

6. Lichtenstein, Morris: Jewish Science and Health, New York, Jewish Science Publishing Company, 1925.

ness . . . be contented, avoid envy . . . love every one, hate no one . . . be hopeful, courageous, never worry, never fear . . . above all trust God at all times . . . wholeheartedly . . . with all your soul . . . your might . . . and you will come to know that your life is inherently a part of his essence and that your mind, therefore, is not made to be a harbor of destructive influence, nor your body a place of refuge for pain and suffering. . . .'"

A prayer for health is offered in a manner akin to the prayer offered for any other need . . . consists of two parts: first, the visualization of divine giving and then of man's receiving; first, the process of healing; second, the state of health restored through that process.

"If any particular organ of the body is affected, the affirmation must declare that health is saturating it, obliterating all defection and suffering. . . . If the heart is affected . . . affirm 'the stream of Divine Health is flowing into my heart, filling it with abundant health. . . .' This formula may be modified to be applied also when the ailment is in the lungs, digestive organs, liver, kidneys . . . any part of the body, care being taken to name the given part distinctly. As in all prayer, relaxation, freedom from strain and distraction is cautioned. The author further directs, 'Repeat the affirmation a number of times, slowly, without the urge of making many repetitions, but rather with concentration and emphasis on each word.'" The prayer should occupy about fifteen minutes.

Directions are also given for prayers for others, with the patient either present or absent.

"The method of praying for others is akin to that of praying for oneself. Both the ailing and the one who prays enter into deep silence. They both relax completely, eliminating all tension from body and mind. They both close their eyes; but while the mind of the patient becomes perfectly passive and inactive, that of the supplicant becomes awake and active. He must visualize the patient as the recipient of God's blessing." This prayer should also last fifteen minutes.

"A prayer for help may be offered either in the presence or absence of the ailing and distressed . . . it is essential that the prayer in the absence of the ailing should be offered in the same manner and with the same devotion as a prayer offered in his presence . . . first visualize him as present . . . seated opposite . . . relaxed . . . have a clear impression of his appearance . . . having previously obtained knowledge of his abode, name, approximate age . . . general appearance . . . and if possible procure a likeness. The necessary part of the absent prayer is the identification of the one prayer for . . . mention name and location at outset of petition. It is best that the ailing one should be aware of the fact that some one is offering prayer for his restoration . . . more advantageous that he be informed of exact hour that prayer is to be offered and that during that period he close his eyes and place himself in a state of perfect ease and relaxation . . . think of Divine Healing permeating him, restoring to perfect health."

"After each prayer," the author states, "definite changes for the better will take place in his condition; pain will become less intense each time, strength will supplant weakness, hope will replace despondency, and well being will be regained."

NEW THOUGHT

As a matter of fact, the term New Thought covers the teachings of all the modern healing cults, including Christian Science, Jewish Science and those still to be discussed. Moreover, the "thought" is as old as philosophy itself. Its modern advocates differ only in the manner in which their systems present it. As the systems become more highly organized, they tend to form separate cults and to work more or less independently, although many, if they qualify, become members in some such organization as the International New Thought Alliance or other centralizing agency. However, none of the other New Thought movements are as unified as Christian Science, a product of the same parent stem.

The entire movement in this country may be traced to the revival of transcendentalism which took place in New England in the early part of the nineteenth century. Contemporary thought at that time went through an upheaval under the influence of a keen interest in Neo-Platonism, with its attendant renewal of interest in mysticism, idealism and particularly the idea of an immanent God.

In 1830 there was formed a rather loosely organized "Transcendental Movement" largely composed of the followers of such writers as Emerson, Channing, Ripley, Margaret Fuller, Brownson and Hedge. Emerson's essay on the "Over Soul" gives the essence of this movement, a combination of the influence of the Orient and ancient Greece.

This has been passed on to New Thought, and to it has been added the influence of the so-called "New Psychology,"[7] which is differentiated from modern empiric psychology by its comparative lack of scientific method and its interest in transcendentalism, which the latter has left practically untouched.

Modern New Thought is also influenced by the doctrines of Theosophy concerning reincarnation, telepathy and the like.

The fundamental principle underlying all New Thought ideas is that "there exists an infinite and eternal spiritual Principle of Being"[8] to which are attributed the qualities of "omnipotence, omniscience, omnipresence."

"This Principle of Being is regarded as Pure Spirit . . . the essence of Spirit being Mind. . . . The Principle of Being is spoken of as Universal Mind. Its substance is regarded as Mental Substance. Its power is regarded as Mental Power. From this arises the statement that 'All is Mind,' including the manifestations, emanation or expression of Mind."

Furthermore, "This principle of Being is held to be One and one only. There being nothing in existence other than this One Principle, the universe must be regarded as necessarily an emanation, manifestation or expression of the One Principle of Being. There is nothing else for us to be. Moreover, the One Principle of Being must be immanent in everything, in different degrees of expression and manifestation."

Thus, if we are ill, unhappy, unsuccessful, it is because we are not manifesting this "Power Within," and it behooves us to take steps to put ourselves "in tune with the Infinite." This may be accomplished according to some New Thought teachers by simply relaxing, thus removing the inhibitions from the flow of energy stored in the mind. Others believe that the mind is influenced by the Infinite Mind and, by making it receptive, energy from without flows in to satisfy

7. This should not be confused with the term "New Psychology" as used in more scientific circles. It is doubtful whether the more popular form has any right to the name.

8. Atkinson, W. W.: History and Principles of New Thought. Holyoke, Mass., Elizabeth Towne Publishing Company.

whatever need is present. Some compare the individual mind to a radio instrument. Its function is to receive energy radiating from the Divine Mind. Tuning in is a process of controlling the vibration rate of the receiving instrument that it may pick up the vibrations from the Infinite.

Practically all are agreed that the "subconscious mind" is either the storehouse of infinite energy or the instrument which must be manipulated in order that the individual may manifest the qualities of the Infinite Spirit of which he is but an emanation. Proceeding on this theory, innumerable methods of developing, stimulating or releasing the forces of the subconscious mind, as well as methods of tuning in with the Infinite for one purpose or another, are proposed. Thus, we find teachers giving lectures followed by private courses and individual instruction in such things as "Concentration," "Relaxation," "How to Manifest," "How to Demonstrate," "Releasing the Forces of the Subconscious Mind," "How to Visualize," "How to get Anything you Want," "How to Stop Worrying," and "How to Succeed."

Treatment varies with the school and may consist of relaxation with the realization of the desired end in mind, verbal treatment with New Thought principles, as expressed by various New Thought writers, or passages from the Scriptures, meditation, visualization of the desired end as recommended in the case of Jewish Science prayers, active or passive repetition with attention wholly concentrated on certain New Thought formulas, such as in case one wishes to manifest health, "I am Well!" "I am Strong!" Prayer of the affirmative type also has an important place.

Music, rhythmic exercises, special types of voice culture, "vitalic" breathing, cultivation of one's special talents in order to better express oneself all have their advocates, each professing to have a special influence over the latent powers that need only be released to emancipate the spirit of man. This is sought to the end that one may manifest more abundantly.

The New Thought student is thoroughly convinced of the influence of mind and he therefore "guards the portals" and, like the Christian Scientist, allows only constructive thoughts to enter. By exercising what he terms his will and imaging faculties, he believes that he can accomplish anything he desires to accomplish. The capacity is either within him and need only be released; or, if he believes that it comes from without, he feels that he need only place himself in the proper attitude of mind to receive it. The main point to him is that it is possible to him if he will but believe it, relax and permit demonstration to take place.

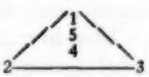
Relaxation in the case of treatment may involve a comparatively simple process consisting of substituting a calm state of mind for a more active one and placing the body in a resting position, or it may advance through the numerous states of lowered tension, varying from mere resting to a condition suggestive at least of a deep autohypnosis.

There are some New Thought centers in which the teaching includes elements of mysticism. The mystics make a practice of entering the silence, communing with the "cosmic mind," etc. In this state, which is described by them as a "superconscious" rather than an "unconscious" or a "subconscious" state, the mystic seeks to draw near to the source of all power, and through his contact to become imbued with its qualities. He believes that it makes him more powerful, wiser and less restricted by the limitations of time and space. In this state he has a "feeling of the presence" of God or the Infinite Power, and he returns to a conscious state with a sense of renewed energy which he believes he has gained from his contact with a higher consciousness than his own. In order to be worthy of this communion, he must live a holy life; and it is in respect to what constitutes this, as well as in the methods they advocate for "entering the silence," that teachers vary.

We have in New York an active Vedanta society, a Sufi center, teachers of the Yogi philosophy and various modifications of these and other similar systems.

One of the methods of entering the silence for the realization of anything, including health, as taught by Premel el Adaras, president of the Society of Transcendent Science, is as follows:

Taking three candles, place them in the shape of a triangle thus:



Now take a crystal (each individual requires a special crystal, according to his date of birth) and place it at 4. Next place some incense (this also must be individual) at 5. Have no other light except the candles and the glow of the burning incense. Sit with limbs folded as in the position indicated in likenesses of Buddha. Hold the arms rigidly flexed, forearms parallel with chest, hands outspread. Roll the tongue up and place it against the upper front teeth. Hold mouth shut, teeth one-eighth inch apart. This is to insure passing above the hypnotic into the "superconscious" state. Close the eyes. Now maintain this position until the hands are numb. Then look in the crystal and you will see yourself as you want to be, well, successful, happy or whatever your desire may be. After repeating this process for seven nights you will have tuned your mind in on Health, Wealth, Happiness, or whatever you desire. From thenceforth you need but relax and you will be attracted naturally to the desired end.

A variation of this treatment for health is to proceed with candles, crystal and incense as directed above.

Instead of squatting on the floor or before the table on which they are placed, lie down totally relaxed on your bed. Drone slowly and distinctly until you fall asleep, the words Om, Mane, Padme, Hum, Om, Oum, taking care to allow the "m" sound to resound and cause a buzzing sensation directly above the nose. This will remove all symptoms and the patient will awaken refreshed and quite well.

This procedure is extreme, and less radical New Thought teaching does not as a rule promulgate such methods. Relaxation, however, figures largely in all treatments, and the use of formulas to be repeated under concentrated attention is an important element. Curing disease also is an active part of the work.

Although they do not assume the authority of parting the patient from his physician as do Christian Science practitioners, New Thought practitioners state that the patient is soon convinced of the greater efficacy of the new method and leaves his "crutches," i. e., medicine, eye-glasses if he wears them, etc., behind. It becomes quite unnecessary for the New Thought student to consult a physician. He feels that doing so interferes with his progress in his ability to help himself, or to be helped by New Thought, because it raises doubt in his mind.

At the last annual convention of the International New Thought Alliance, 10,000 persons were present. It is not possible, however, to obtain a reliable estimate of the large number of people connected with the New

Thought movement because it is so widely scattered. It has centers of one kind or another throughout the world. Its literature is very extensive. Ralph Waldo Trine's book, "In Tune with the Infinite," one of the best known New Thought books, has already been through 700 editions. The teachings are promulgated through magazines with wide circulation, lectures apparently always well attended, private courses, and individual instruction. Treatments are given by practitioners who are as a rule also teachers and lecturers. Meetings are for the most part held in hotel parlors or lecture halls. There are as yet no organized New Thought churches, housed in church edifices of their own.

Prominent among New Thought writers are Ralph Waldo Trine, Elizabeth and William Towne, Charles G. Leland, H. Emilie Cody, Kate Boehme, George Warton James, Gertrude Bradford and William Walker Atkinson, and there are others too numerous to mention. The literature includes almost every topic of successful living, with titles such as "How to Remake Yourself," "How to Cure Yourself," "Lessons on Truth," "You and Your Forces," "Worry, Hurry Cured," "Your Will Power, How to Develop It," and "Health and Wealth from Within."

DIVINE SCIENCE

Strictly speaking, while merely another type of New Thought, Divine Science stands out by itself. Its teaching is somewhat less complex, although there is a tendency for Divine healers to build up systems which are more or less individual and dependent on their personal convictions. The fundamental teachings are comparatively simple.

1. God is good and wishes only good for his creatures.
2. Disease, unhappiness, misfortune are of man's own making.
3. God will cure man and show him how to overcome all difficulties if man will but follow God, believing in his omniscence, omnipotence and omnipresence.

Treatment of a sufferer consists in persuading the individual of these facts, especially of raising in him the belief that God will cure him if he asks him to do so. This may be accomplished through conversation or reading of appropriate Scripture passages. When faith has been firmly established, the patient's state of expectancy is further enhanced by earnest prayer of an affirmative nature. This is not attempted until relaxation has been accomplished, nor until full cooperation on the part of the patient has been secured. Prayer is usually followed by "laying on of hands." This consists of placing the hands on the head of the patient.

To certain healers who believe themselves imbued with magnetic powers, this is a most important part of the treatment and must be carried out by a more or less elaborate technic with regard to position of the hands and attitude of the healer, in order that the flow of power from healer to patient may be facilitated. Others ridicule this idea.

New York has seen many such Divine healers, notable among them Francis Schlatter, Bradley Newell, John Alexander Dowie, and more recently James Moore Hickson. The Middle West still has several settlements established by Dowie. In New York are three active centers carrying on the work founded about 1919 by the late John Murray.

The followers of Murray believe that the mind forms the patterns for conditions in the physical body, and they guard their thoughts accordingly. They try to follow the teachings of Christ as interpreted by the founder of Divine Science, as the movement is known. In this way, they learn to think rightly and their welfare is accordingly influenced. They believe that they can dispense with medical help.

Those who have followed Mr. Murray in the leadership of the movement continue to teach and to heal. Besides work with individuals, they carry on daily public healing services. These consist of a short address by the leader, including a discussion of some appropriate Bible text, prayer and a "treatment." The leader reads or recites a given passage from the Scriptures or from Mr. Murray's writings, while the listeners close their eyes and relax. This is usually followed by affirmative prayer. The work is supported by free will offerings and the sale of Mr. Murray's numerous writings. These meetings are well attended, and the movement has hundreds of loyal, enthusiastic followers. The mention of Murray's name in other New Thought audiences frequently brings out considerable applause.

The best known Divine healer at present in this country is probably Mrs. Amy McPherson, who conducts services of a revivalistic nature and also does individual work. She is reputed as unusually successful in bringing relief to all kinds of sufferers, and is so popular that her followers have recently erected a large temple for her in Los Angeles, at the cost of $100,000. Mrs. McPherson claims "cures" in 80 per cent of the cases she treats.

(To be continued)

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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(Continued from page 1440)

Preservation of Aqueous Solutions.—While watery solutions of inorganic substances, or of organic substances with antiseptic properties, are not subject to change on keeping, there is quite a list of organic substances that are prone to fermentative or putrefactive decomposition when kept in aqueous solution without due precautions. Concentrated solutions of many of these substances are less prone to decomposition than are dilute solutions. Concentrated sugar solutions keep well, while dilute sugar solutions spoil readily. Weak solutions of many alkaloidal salts permit germ growth, while concentrated solutions may be easily kept germ free. This is one of the advantages of prescribing rather concentrated solutions to be diluted just before taking. Glucosidal principles in aqueous solution are very prone to decomposition.

Preservatives should be added only when they are unobjectionable from every standpoint. Among preserving agents, formaldehyde 0.05 per cent, has been

* This is the twentieth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

found by Gabel [51] the most efficient, acting as it does in acid, alkaline and neutral solution. Benzoic acid, acting in 0.1 per cent solution, is superior to salicylic acid, of which 0.2 per cent is required; but either of them is efficient only in acid, and useless in alkaline medium. Alcohol preserves an acid drug preparation when present to the extent of 15 per cent; for alkaline and neutral liquid, 17.5 per cent alcohol is needed for preservation. Boric acid, chloroform and cinnamic acid have not been found efficient preservatives under the rather exacting conditions of Gabel's experiments. Glycerin, unless quite concentrated, is worthless as a preservative, 45 per cent being required in an alkaline medium; but even this much is insufficient in an acid or neutral medium.

Sterilizing the solution and preserving it in sterile containers, such as ampules, is the most desirable method of preservation of solutions prone to bacterial decomposition, especially those that are to be used for administration by injection.

Vehicles.—In the art of prescribing, a good knowledge of vehicles is of the same importance as a liberal variety of spices and condiments in the art of cooking. Just as "we can live without art, but not so well," so we can get along without artistic perfection of our medicaments, but by no means so well. Our formularies offer us a choice among aromatic waters, spirits and tinctures, as well as among sweet preparations, such as syrups and elixirs.

As the choice of the proper vehicle is determined in the first place by the solubility of the active ingredients, it will be most helpful to arrange the vehicles, in accordance with their solvent action, into (1) aqueous and (2) alcoholic vehicles.

Aqueous Vehicles: The official waters are aqueous solutions of volatile substances.[52] Two very dissimilar classes of preparations come under this heading: the aromatic waters and the chemical waters, such as ammonia water.

Only the aromatic waters concern us here. They are saturated solutions of volatile oils and analogous substances. As volatile oils are only slightly soluble in water, the aromatic waters are weak preparations. The quantity that dissolves is just large enough to give these waters a pleasant flavor without imparting to them noticeable therapeutic properties. Hence their dose is large, ranging from 4 to 16 cc. One may use, as pleasant vehicles, anise water, fennel water, orange flower water, cinnamon water, peppermint water and rose water. The last named seems to be more suitable for external rather than for internal use. Chloroform water is really quite pleasantly flavored, of slightly sweetish taste, and has preservative powers which make it desirable for solutions that do not keep well.

Among the sweet aqueous vehicles, most prominent are the syrups, which are nearly saturated solutions of sucrose in aqueous liquids. Their especial value lies in pleasant taste of sugar and its action as a preservative. While dilute solutions of sugar ferment quickly unless preserved by special means, a fully saturated solution is not only quite stable but even capable of preserving other substances from fermentation, probably because sugar by its great affinity for water renders unavailable the moisture necessary for the development of microorganisms. Sugar forms, furthermore, an excellent preservative for certain unstable chemicals, such as hydriodic acid, ferrous iodide and hypophosphites, inhibiting chemical change probably by reason of its own chemical sluggishness. While some of the official syrups, as the syrups of the chemicals mentioned above, have an intrinsic medicinal action (medicated syrups), the majority of them are mere flavoring vehicles. The flavoring syrups, generally administered in doses of a teaspoonful—though much more might be given—are too thick and too sweet to be given undiluted; but the dilution should be ordered just before taking rather than in the prescription itself, for diluted syrups spoil readily on keeping, unless antiseptic ingredients are present. Interfering with a child's appetite and digestion by frequent dosing with heavy syrup should, of course, be avoided, especially in the case of ill nourished and feeble children, whose recovery may depend more on improved nutrition than on any medicament.

The official syrups named below are used in pleasant medication, and it is well to be familiar with all of them; for, just as variety of flavoring is aimed at in cooking, so is it well to aim at such variety in medication. If most of a physician's medicines look and taste nearly alike, as they easily may when he uses the same flavoring vehicle, patients may come to suspect that he uses the same medicine for all kinds of ills. When several members of a household require different medicaments, it is well to make distinction easy between them by marked divergence in color, flavor and taste. The syrups referred to above are:

Syrup, sometimes, though unnecessarily, also called simple syrup.
Syrup of citric acid (lemon syrup), which has an acid reaction due to citric acid (1 per cent) and hence is incompatible with alkali carbonates.
Syrup of orange, which also contains citric acid (0.5 per cent).
Syrup of orange flowers.
Syrup of pine tar.
Syrup of wild cherry.
Compound syrup of sarsaparilla.
Syrup of tolu.
Syrup of ginger.

To this list the following contributions of the National Formulary might be advantageously added:

Compound syrup of asarum (wild ginger).
Syrup of cacao (chocolate syrup).
Syrup of cinnamon.
Syrup of glycyrrhiza.
Aromatic syrup of eriodictyon (yerba santa).
Syrup of raspberry.
Syrup of thyme.

Among these, the syrups of citric acid, of orange and of raspberry might be noted most especially as pleasant vehicles for salines, the syrup of wild cherry as a corrective for sour tastes, and the syrups of cacao and glycyrrhiza, and the compound syrup of eriodictyon as the most suitable of the syrup vehicles for bitter drugs. One must beware of straining excessively the disguising values of syrups, most especially for the last named purpose: for the bitter sweet taste is repulsive to most of us. Thus, while quinine (alkaloid) or quinine ethyl carbonate (euquinine) in children's dosage may well be given in any one of the last mentioned syrups, it

51. Gabel, L. F.: Preservatives in Pharmaceutical Preparations, J. Am. Pharm. A. **10**: 767 (Oct.) 1921.
52. In contradistinction to the official solutions, which are aqueous solutions of nonvolatile substances, excepting syrups, infusions and decoctions, which naturally form distinctive classes.

would be folly to try to disguise the taste of strychnine by means of them. Unusual flavors, like those of the compound syrup of asarum or of the syrup of thyme, are sometimes relished when the old familiar flavor of licorice or tar might seem flat and stale.

The syrups are freely mixable with water and aqueous liquids, but, if added in concentrated form to strong alcoholic liquids, the sugar is precipitated or gradually crystallizes out of solution, as it is much less soluble in alcohol than in water. Being concentrated solutions, syrups will dissolve only a small quantity of other substances. If it is necessary to dissolve a large quantity, a certain amount of water will have to be added.

For diabetic patients and others for whom the prescribing of sugar would be undesirable, or if its fermentation must be avoided, gluside (saccharin) or soluble gluside (soluble saccharin) might be employed in quantities not exceeding 1 part per 2,000; otherwise it becomes disagreeable. Popular opinion to the contrary notwithstanding, gluside is perfectly harmless in any quantity that might be employed for sweetening of food or medicine.

Alcoholic Vehicles: Aromatic spirits and tinctures are chiefly used for the flavoring of strongly alcoholic liquids. All of them are incompatible with water. Among them may be mentioned:

Spirit of anise.
Compound spirit of orange.
Spirit of cinnamon.
Spirit of peppermint.
Spirit of spearmint.
Tincture of lemon.
Tincture of tolu.
Tincture of ginger.

These are rather strong (average, 10 per cent) alcoholic solutions, the average dose of which is given as ranging between 1 and 2 cc. Even one tenth of this suffices for the flavoring of alcoholic medicaments. The spirit of lavender and the compound tincture of lavender are perhaps better suited for flavoring external applications than medicament for internal use, though the latter is the traditional flavoring and coloring ingredient of the solution of potassium arsenite (Fowler's solution).

The aromatic tinctures are of interest because they offer eligible vehicles for alcohol soluble medicaments, especially those of bitter taste, which are not improved by sweetening. The best one among those made with strong alcohol as a menstruum is the tincture of sweet orange peel. In connection with it and the aromatic spirits we must remember that, when used in any considerable proportion, they are incompatible with water and even with diluted alcohol.

Tincture of cardamom and compound tincture of cardamom are made with diluted alcohol (50 per cent) and may be remembered as useful diluent and flavoring vehicles for tinctures made with mixtures of nearly equal quantities of alcohol and water. The dose of these aromatic tinctures is a teaspoonful. These, as well as all other strongly alcoholic liquids, should be freely diluted just before taking.

Elixirs are aromatic sweetened alcoholic preparations in which medicament may be dissolved. The first object aimed at in the modern elixir is an agreeable flavor. By means of it, the taste of nauseous medicines may often be rendered less disagreeable. They are especially useful as vehicles for hydro-alcoholic preparations, such as tinctures and fluidextracts, if their alcohol content is properly adjusted. There are two elixirs official in the U. S. P., aromatic elixir and elixir of glycyrrhiza, the latter of which is merely 12.5 per cent of fluidextract of glycyrrhiza added to aromatic elixir. The red aromatic elixir of the N. F. is aromatic elixir colored a beautiful red by 2:1,000 of cudbear. It must be remembered that these elixirs containing from 20 to 25 per cent of alcohol are as strong in alcohol as the strongest sherry wine, that even teaspoonful doses may be intoxicating to infants, and that their long continued use in liberal quantities may lead to the alcohol habit. Hence, unless medicated, these are classed among the intoxicating beverages by the National Prohibition Act, and cannot be prescribed except by complying with all its provisions.

The National Formulary affords a number of elegant vehicles of much lower alcohol content than the U. S. P. elixirs. The following elixirs contain only from 5 to 10 per cent alcohol—merely enough for solution and preservation—and, properly diluted, are admirable vehicles even for administration to children:

Aqueous elixir of glycyrrhiza—this is a good vehicle especially for salines, such as bromide and iodide.
Compound elixir of almond, especially useful for sour medicines, with which it gives the "cherry phosphate" flavor.
Elixir of anise.
Compound elixir of cardamom.
Compound elixir of vanilla.

It must be admitted that the physician experiences considerable difficulty in adjusting the alcoholic strength of his vehicles to yield clear and permanent solutions with the various medicinal fluidextracts and tinctures, as it is difficult for him to bear always in his mind the exact alcoholic strength of the menstruums. This difficulty could be overcome by the use of "iso-alcoholic elixir," as suggested by Fantus and Snow,[53] an elixir automatically adjusted by the pharmacist so as to have an alcoholic strength just sufficient to dissolve the medicament for which the elixir is to serve as a vehicle. The aromatic elixir of the present U. S. Pharmacopeia contains approximately 25 per cent alcohol, which is sometimes too much and sometimes not enough. Thus, if this elixir is to serve as a vehicle for sodium bromide, potassium acetate or sodium salicylate, no such amount as 25 per cent alcohol is required or desirable; alcohol, be it remembered, actually increasing the taste impression produced by these substances. If, on the other hand, it is to be used as a diluent for fluidextract of cannabis or fluidextract of buchu, it is decidedly deficient in alcohol and, in both instances, turbid unsightly mixtures result. Indeed, whenever there is a marked discrepancy between the alcohol strength of elixir and medicating preparation, precipitates occur, which in some cases, as, with tinctures of digitalis, veratrum viride, aconite, nux vomica, colchicum and lobelia, are liable to be toxic and dangerous. To enable the pharmacist to dispense iso-alcoholic elixir, two basic aromatic elixirs are required: first, an aqueous elixir containing approximately 5 per cent alcohol;

53. Fantus, Bernard; and Snow, C. M.: J. Am. Pharm. A. 10: 277 (April) 1920.

and, secondly, an alcoholic elixir containing 95 per cent alcohol. The following formulas are proposed for these:

AQUEOUS ELIXIR

Compound spirit of orange	10 cc.
Alcohol	50 cc.
Syrup	375 cc.
Glycerin	200 cc.
Distilled water to make	1,000 cc.

Purified talc is used for clarification.

ALCOHOLIC ELIXIR

Compound spirit of orange	5 cc.
Gluside	3 Gm.
Glycerin	200 cc.
Alcohol to make	1,000 cc.

These two are mixable with each other in all required proportions.

If the physician prescribes "iso-alcoholic elixir," the pharmacist who is familiar with these preparations would take care of the proper alcoholic strength of the vehicle by using the aqueous and the alcoholic elixirs in the proportion in which water and alcohol exist in the menstruum of the active preparation, or is required for the making of a solution. This he could easily do with the help of his reference books. Incidentally, it might be noted that the alcoholic elixir, as it contains gluside (saccharin) instead of sugar, might be used as a pleasant alcoholic vehicle for medicaments intended for the diabetic patient. The aqueous elixir, containing only about 5 per cent alcohol, might also be employed as an additional elegant vehicle for water-soluble medicaments for children.

The use, as vehicles, of the elixir of pepsin and of the compound elixir of pepsin and rennin, elixir of caroid, and the like, has no scientific foundation whatever, as the digestive ferments are practically never absent from the stomach in cases of dyspepsia. It is difficult to see how the presence of these ferments in a medicament could make it more acceptable to a stomach that has an abundance of ferments, as it is well known that a slight increase in the amount of ferment does not measurably increase digestive activity. The practice is, no doubt, a survival of the day—not so long past—when the digestive ferments were hailed, even in scientific circles, as a panacea for digestive disorders. Commercial interests have been and are still at work to keep the fallacy alive. It is not to be denied that these elixirs are pleasant vehicles but they would be just as pleasant, just as efficient, and less expensive without the digestive ferments.

(To be continued)

Activities in the Athenian Program of Physical Education.—Games and gymnastics in Athens seem to have included most of the forms practiced in later life—running, the broad jump with and without weights in the hands, throwing the javelin and the discus for distance, and, above all, wrestling, besides the rudiments of boxing, and a form of the pancratium, a struggle which combined certain features of both boxing and wrestling with others of its own. Mention is also made of simple exercises to develop correct carriage and a graceful step in walking, and it is said that the art of swimming was early acquired, and that games, especially those in which the ball was used, were by no means forgotten. Dancing, at least in its more advanced forms, was not a regular subject of instruction at Athens, but was left to choral bands which received special training for their appearance before the public on festal occasions.—Leonard: History of Physical Education, p. 222.

ACTIVE "CORRESPONDENCE" DIPLOMA MILLS

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

From time to time diploma mill scandals have aroused the public and physicians to the dangers of the lack of suitable control of educational institutions. The laxness of laws permits the easy establishment of schools and colleges of all kinds in many states, and the difficulty of verifying graduation and diplomas permits unqualified men to secure credentials to which they are in no manner entitled.

The report that follows indicates the difficult procedure sometimes necessary to prevent unwarranted use of such diplomas, and exposes the nature of several closely related diploma mills.

THE UNIVERSITY OF TRINITY COLLEGE

Hardly a month passes but some new "university" with a high sounding title is found to be filling the mails with

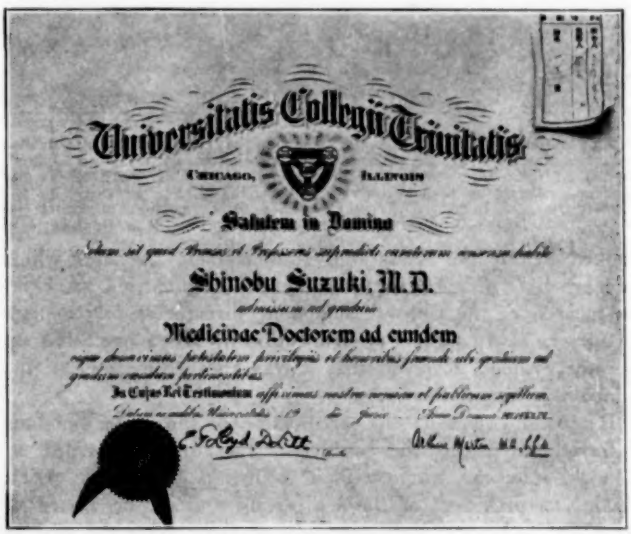

Universitatis Collegii Trinitatis
CHICAGO, ILLINOIS
Salutem in Domino
Shinobu Suzuki, M.D.
admissum ad gradum
Medicinae Doctorem ad eundem

Fig. 1.—Although this diploma is signed by two persons unidentified in other literature of the university, it was accompanied by an affidavit issued in the name and under the seal of the "University of Trinity College," signed by "A. W. Slade, D.D., LL.D.," as "President of the University and Board of Trustees." (See upper portion of figure 4.) In this affidavit the name of Shinobu Suzuki was not followed by the "M.D."

follow-up letters or issuing diplomas after the flimsiest pretenses of their having been earned. The latest instance, evidently, is the "University of Trinity College" or, latinized, the "Universitatis Collegii Trinitatis." Nothing was known regarding this institution until photostat copies of diplomas issued to two students in Japan were received from the editor of the *Japan Medical World*. These diplomas, indeed, looked genuine, literally bedecked as they were with official signatures and seals of an imposing nature. The signature of the president of the "university" had been certified to by a notary public of Chicago; the notary's signature by a county clerk in Illinois, and each subsequent signature in turn certified to, evidently, by higher American and Japanese officials. Both of these diplomas were "ad eundem" degrees issued, respectively, to Shinobu Suzuki and Hanhito Otake by the University of Trinity College. A third diploma accompanying those of the University of Trinity College was a degree in medicine also "ad eundem" issued by Lincoln-Jefferson University to one Ribeji Hagibani. The three diplomas are

reproduced herewith. Meanwhile, we are informed that the three Japanese who obtained these irregular medical diplomas have been discredited in Japan.

A MEMBER OF THE LINCOLN-JEFFERSON BROOD

An investigation was instituted immediately to ascertain the origin of the so-called University of Trinity College. Strangely, this great institution appears to have been overlooked by all the recognized standardizing agencies which prepare lists of approved colleges and universities. A careful search of the Chicago telephone directories for the last five years also revealed no institution by that name. It soon became evident, however, that it was another member of the Lincoln-Jefferson family.

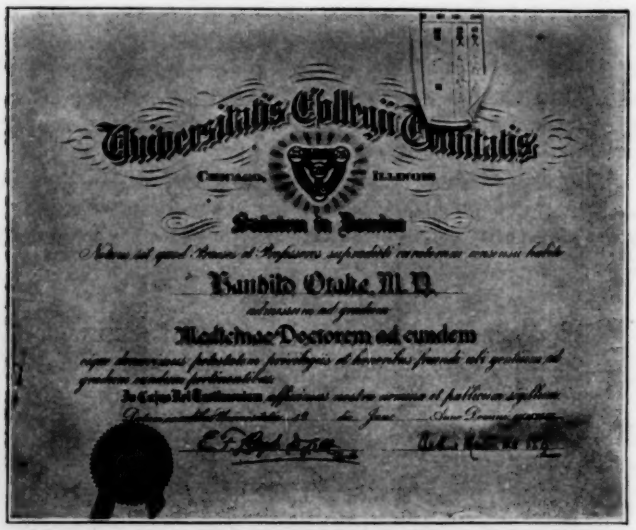


Fig. 2.—Although this diploma is signed by two persons unidentified in other literature of the university, it was accompanied by an affidavit issued in the name and under the seal of the "University of Trinity College," signed by "A. W. Slade, D.D., LL.D.," as "President of the University and Board of Trustees." (See upper portion of figure 4.)

Photostat copies of the certification of the three diplomas referred to solved the problem. The diploma issued by Lincoln-Jefferson was certified to by "A. W. Slade, D.D., LL.D., as president of the University and of the Board of Trustees," and the certificate was stamped with the seal of Lincoln-Jefferson University.

The diplomas of the University of Trinity College were also certified to by "A. W. Slade, D.D., LL.D., President of the University and of the Board of Trustees." The latter, however, as shown in figure 4, were stamped with the seal of the "Universitatis Collegii Trinitatis." These disclosures show that the University of Trinity College is conducted by the same individuals who are responsible for the Lincoln-Jefferson University, even though the diplomas of the two institutions bear different signatures.

A letter from the secretary of state of Illinois shows the University of Trinity College was legally chartered, having been incorporated in Illinois in 1921 under the "not for profit" act. The address given was room 718, 155 North Clark Street, Chicago—a different address from that of Lincoln-Jefferson University, but its board of directors and incorporators were F. J. B. Walker, 1006 Michigan Avenue, LaPorte, Ind., A. L. Walker, 1006 Michigan Avenue, Laporte, Ind., and E. C. Ravenscroft, 127 North Dearborn Street, Chicago —persons closely identified with the latter institution.

According to circulars of the Lincoln-Jefferson University in the files of the American Medical Association, "Rev. John F. B. Walker, Ph.D., D.D., LL.D., F.R.G.S.," is given as "a perpetual member of the Board of Trustees" and for six years president of the Lincoln-Jefferson University. "E. C. Ravenscroft, Ph.D., J.D., D.C.L.," was its former secretary and is now a member of the board of trustees. As president of Lincoln-Jefferson, "Rev." Walker signs himself as "John F. B. Walker, Ph.D., D.Sc." At LaPorte, Ind., he is known as Rev. Dr. F. J. Barwell-Walker and, we are informed, is the rector of the Episcopal church at that place. This church is located at 1002 Michigan Avenue, and the rectory is at 1006 Michigan Avenue, LaPorte, Ind.—the same address that appears in the articles of incorporation of the University of Trinity College, although on the latter the initials are reversed, reading, "F. J. B. Walker." There may be definite reasons why in the signatures the initials are occasionally twisted around. The "Rev." A. W. Slade, D.D., LL.D., is reported also to be the rector of the local Episcopal church at Valparaiso, Ind. One wonders whether the degrees paraded by these two "reverends" are the products of their own mills; also whether these are not two more cases of "Dr. Jekyll and Mr. Hyde."

HEADQUARTERS OF THE LINCOLN-JEFFERSON UNIVERSITY

Interest in the offspring of the Lincoln-Jefferson University led to an investigation of the addresses given for it and for the University of Trinity College. Room 718, 155 North Clark Street, Chicago, the address of the latter, proved to be occupied by a group of architects who knew nothing of such an institution. The entire university had vanished or moved to parts unknown to them. Evidence revealed a connection between University of Trinity College and Lincoln-Jefferson, so that a visit was made to the latter's address given in the telephone directory. The Lincoln-Jefferson University occupies what it is pleased to call its "main headquarters"—a room on the eleventh floor of an office building in Chicago's business district. The investigator found that the entire university, including all it had in the way of laboratories, botanical gardens, libraries, lecture rooms and other equipment—such as are usually required to make up a reputable university—occupied a space not more than fourteen square feet, and space was still left for the University of Trinity College. These fourteen square feet were honored as the site, therefore, of two great universities. Possibly this is why the space had been divided into two rooms.

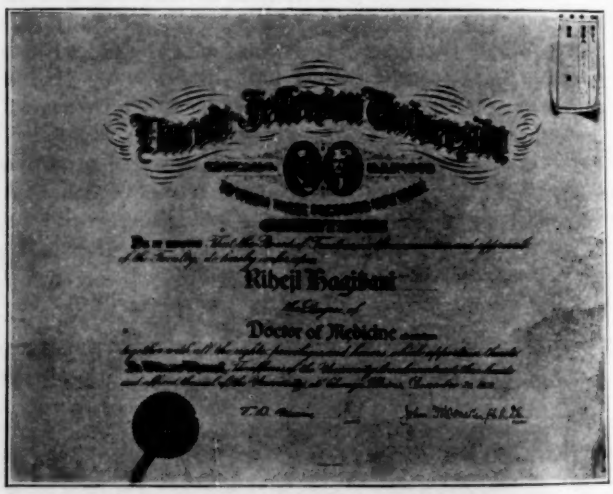
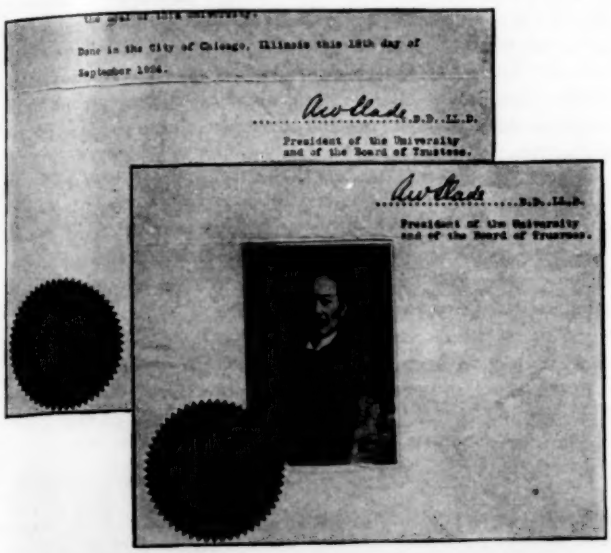


Fig. 3.—Note that this diploma is signed by "John F. B. Walker, Ph.D., D.Sc., President," whose name stands first among the officers and faculty of the Lincoln-Jefferson University. It was accompanied also by an affidavit bearing the seal of the Lincoln-Jefferson University and signed by "A. W. Slade, D.D., LL.D., President of the University and Board of Trustees." See lower portion of figure 4.

The smaller room, apparently the holy of holies, bore a sign "Private." The college furniture and equipment in the

larger room consisted of (*a*) one desk of very ordinary appearance; (*b*) one bench, which would seat two or possibly three "students," and (*c*) two or three ordinary chairs. The entire visible personnel was embodied in a woman of thirty-five or forty summers who informed our investigator that a "Dr." Slade in Valparaiso, Ind., would be glad to answer any questions submitted to him. The work, she said, was carried on by correspondence and all manuscripts were forwarded to Dr. Slade of Valparaiso and Dr. Walker of LaPorte, Ind., to whom she referred as "two English ministers" and also as "the head men on the faculty." When questioned as to whether or not medical courses were given by correspondence, she said rather hesitatingly that she thought "such work isn't given." Later she remembered that the faculty did give preliminary work in medicine.


Done in the City of Chicago, Illinois this 18th day of September 1924.

A. W. Slade, D.D., LL.D.
President of the University and of the Board of Trustees.

A. W. Slade, D.D., LL.D.
President of the University and of the Board of Trustees.

Fig. 4.—These show the signatures and seals on the affidavits which accompanied the diplomas shown in figures 1 and 3. Note that both are signed alike by "A. W. Slade, D.D., LL.D., President of the University and the Board of Trustees," although one bears the seal of the University of Trinity College, the other the seal of the Lincoln-Jefferson University (names on seals Latinized).

STATEMENTS IN CATALOGUE

In a catalogue obtained on this visit it is stated that the Lincoln-Jefferson University and the University of Trinity College are "affiliated" and that the charter of the latter came "under the control of the Lincoln-Jefferson University in 1923." A report from the secretary of state of Illinois regarding the University of Trinity College, however, shows that it was chartered in 1921 by practically the same group that was then in control of the Lincoln-Jefferson University.

Another statement in the catalogue is that courses "are offered in the University of Trinity College under rather less strict (?) regulations than are in force with the Lincoln-Jefferson University," and that any one "holding Lincoln-Jefferson University degrees may duplicate those degrees from Trinity College by payment of the regular ad eundem degree fees."

In view of the three diplomas reproduced in this article, the statement published in the catalogue "that M.D. . . . degrees are not offered *by any reputable* school of correspondence work" (italics ours) and "we are not prepared to offer courses leading to these degrees," is sadly amusing. In a letter to the California board, John F. B. Walker states: "No medical degree has ever been conferred during my time with the Lincoln-Jefferson University for nonresident work." Nevertheless, note the degree from Lincoln-Jefferson University reproduced in this article, which was evidently signed by John F. B. Walker himself! Probably the fact that the American Medical Association has this part of the diploma mill field pretty well safeguarded so far as North America is concerned explains the sentence.

The willingness of this school to deceive the public is indicated by the statement in its catalogue that "all diplomas are issued without mention that any part of the work was taken by correspondence." In other words, let the public look on them as evidences of honest-to-goodness study, if they are foolish enough to do so!

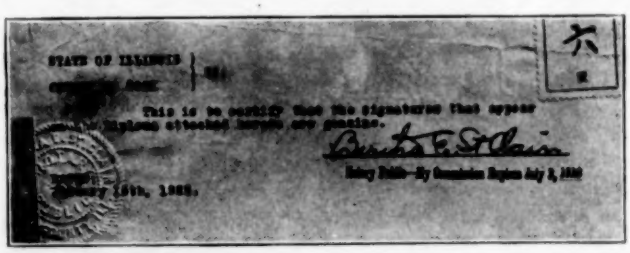
ARE THESE DIPLOMAS RECOGNIZED?

It is amusing to note at the back of the bulletin of the Lincoln-Jefferson University that one of "A Few 'Dont's' to Remember" reads "Don't be disappointed if some resident school does not give you reasonable credit for your work with us. It is not our fault. You will be suffering for the faults of correspondence schools in the past unless it happens to be simply stubbornness or 'swelled head.'" As a matter of fact, students of this university are "disappointed," no doubt, if they attempt to transfer their credits to any recognized institution.

The diplomas issued by these institutions are of so suspicious a character as to make them unworthy of recognition by reputable educational agencies or institutions. The officers of these mills, meanwhile, are carrying on their traffic in spurious degrees at the same time that they are hiding under their ministerial garbs as purveyors of truth and sanctity! According to the strings of degrees following their names, the "Rev. A. W. Slade, M.A., D.D., LL.D.," and the "Rev. John F. B. Walker, Ph.D., D.D., LL.D., F.R.G.S.," might be viewed as paragons of erudition, were it not for the suspicion that all these degrees were obtained, probably without the expenditure of either time or money, from the same mills which are furnishing degrees so liberally to others at so much per.

THE AMERICAN UNIVERSITY—ANOTHER MEMBER OF THE BROOD

The Lincoln-Jefferson University is shown to be closely related with a third institution, a so-called "American University" of Highland Park, Los Angeles, the incorporators of which, again, are Francis J. B. Walker, LaPorte, Ind., and E. C. Ravenscroft, Chicago. In a communication to the California State Board of Medical Examiners, Walker admitted that he "had agreed to hold the honorary position of chancellor of the American University and to act as dean of its theological department . . . until Ravenscroft could get things organized." The files of the California board show that the American University was incorporated in that state, April 11, 1921, but the first affidavit of the corporation papers were executed in Cook County, Ill., March 21, 1921. There is an "American University" incorporated in Illinois, but evidently by an entirely different group of individuals. Possibly it is in affiliation. The latter is a mail-order, correspondence affair of the most flagrant type and is conducting a large


STATE OF ILLINOIS

Burton E. St Clair

Fig. 5.—This shows the signature and seal of the notary public who certified to the signatures of "A. W. Slade, D.D., LL.D." on the affidavits which accompanied the diplomas shown in figures 1, 2 and 3. Rev. Dr. Slade's signatures are shown in figure 4.

business in the issuing of diplomas, the main requisite evidently being the collection of the fees! A glance at the incorporation papers of the California institution, reproduced below, reveals no lack of versatility on the part of the "university"—quite consistent with the character of the "American University" of Illinois. Besides the numerous "colleges" listed which confer degrees, note also that the university reserves the privilege to add "any other colleges, schools or seminaries or departments that circumstances may require." Indeed, degrees of any kind seem available for the asking (and, of course, the payment of the required fee!) from this group of institutions which, although dignified by the title "university," on investigation were found to lack the buildings, grounds, laboratories, libraries and other things deemed essential by all bona fide and reputable universities!

American University

Incorporation No. 94945, Filed April 11, 1921

The purposes:—To provide, either in residence or by correspondence courses of instruction leading to all degrees usually granted by universities and colleges in the College of Liberal Arts, the College of Science, the College of Law, the College of Pharmacy, the College of Political and Social Sciences and Commerce, the College of Education and Normal Development, the College of Applied Science, the College of Divinity of Theological School or Seminary, the College of Fine Arts, the College of Agriculture, the College of Music, the College of Engineering, the Graduate College, the Grammer School, the High School or Academy and any other colleges, schools or seminaries or Departments that circumstances may require. On the completion of such courses to issue appropriate diplomas. To confer ad eundum and honorary degrees in all departments as may be deemed desirable. This corporation reserves the right to establish branches of this University in any State of the Union and in all parts of the world.

The place of business is given as Los Angeles, and the "Directors and Trustees" are named as follows:

Francis J. B. Walker, La Porte, Ind.
E. C. Ravenscroft, Chicago, Ill. (Temporarily).
S. C. Ravenscroft, 454 West End Ave. 56, Los Angeles.
A. M. Ravenscroft, 454 West End Ave. 56, Los Angeles.
L. M. Ravenscroft, 454 West End Ave. 56, Los Angeles.

THE "AMERICAN UNIVERSITY'S" HEADQUARTERS

A visit to the main office and headquarters of the American University revealed a small upstairs room at 5636 Pasadena Avenue, Highland Park, Los Angeles, which was not only the "office," but also the living and sleeping quarters of "Dean" Ravenscroft. The complete furnishings of the "university" were enumerated as a dilapidated bed, an aged desk and a couple of chairs. From subsequent inquiry and an abundance of information on file, this equipment appears to harmonize perfectly with the character of this university.

During the interview, the "dean" used the pronoun "we" in discussing the affairs of the university. When asked who the "we" included, he admitted it was just himself, because the word "we" sounded better. A bulletin of the American University showed that Rev. George M. Kelly was president; that Samson C. Ravenscroft was secretary, and that George T. Mills was treasurer. The "dean" stated that President Kelly was his cousin and that he was a preacher living in West Virginia, but refused to reveal his mail address, saying, "You know how relatives are, they go back on you when you get in trouble." "Samson C. Ravenscroft is my brother," said the dean. "He tried the real estate business for awhile, but of late has been working as a house painter." He said that George T. Mills, the treasurer, was his cousin and that he lived in Santa Monica, Calif. Dean Ravenscroft stated that Irving I. Jacobs, the "Dean of Pharmacy," resided in New Haven, Conn.; the "Dean of the Business College" at Miles City, Mont.; the "Dean of the Teachers' College" at Washington, D. C.; while the "Dean of the College of Liberal Arts" held forth at Peru, Ind., and two other members of the faculty lived somewhere in England, their exact address being unknown.

The "dean" admitted that he was connected formerly with a correspondence school in Chicago, and that some one in that city occasionally sent him a list of names of prospective students to whom he would send the university's letters and literature. This alleged correspondence school offers to confer doctor degrees as well as the title of professor and to issue diplomas to accountants.

Reports show that agents of the American University have openly advertised its degrees in England, Venice, India and Japan. A communication from Japan alleges that the American University, as well as the University of Trinity College and the Lincoln-Jefferson University, are offering correspondence degrees and selling diplomas in liberal arts, law, medicine and pharmacy to Japanese, Indians and Chinese at a good price.

DEGREES OF ALL VARIETIES—OTHERS FOR THE ASKING

The announcement of the Lincoln-Jefferson University[1] states that in 1917 "things could hardly have been worse" inasmuch as "there were few students and no funds." Conditions certainly "have changed" in regard to students (or graduates) and regarding funds also, no doubt. In slightly more than two years after Sept. 16, 1920, 536 degrees are listed as having been issued; there were thirty-eight different varieties and in twenty different subjects, besides academic diplomas and certificates in shorthand and typewriting. Titles

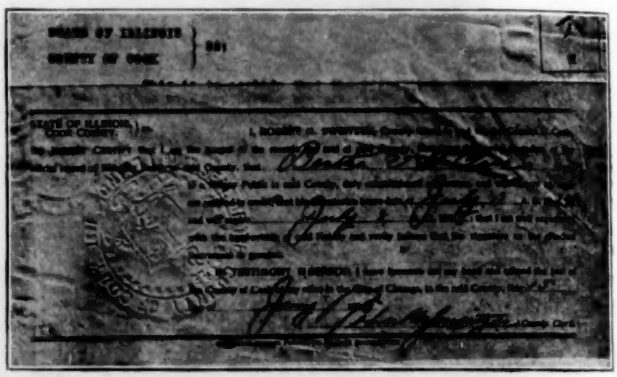


Fig. 6.—This is a photograph of the certification by the county clerk of Cook County, Ill., to the signature of the notary public who, in turn, certified to the signature of the "President of the University and Board of Trustees," who certified to the three diplomas reproduced in figures 1, 2 and 3—sort of a "House-that-Jack-Built" affair! The county clerk's signature was also supposed to be certified to by the signature and seal of the Japanese consul, and the latter's signature was certified to by the signature and seal of the Japanese ambassador—or some other higher Japanese official. Thus the three diplomas, which were of little if any value educationally, reached Japan literally bedecked with official signatures and seals—if not also with ribbons!

of "professor" of this, that or the other subject have also been issued. The statement, in capital letters, appears that *"If you do not find what you want . . . write to the president."* In the charter of the American University of Los Angeles, also, after naming eighteen different schools and colleges, it is provided that "any other colleges, schools or seminaries or departments that circumstances may require" may be opened by this university. Right is reserved also "to establish branches of this university in any state of the Union *and in all parts of the world.*" [Italics ours.—ED.]

ADVERTISING DIPLOMAS ABROAD

The good name of American education in foreign countries has suffered greatly from the activities of the agents of such "legally chartered" correspondence mills, which are really without equipment and standards but are always ready with degree conferring diplomas—elaborately signed and sealed but which educationally are of doubtful value—for which

1. Vol. V., New Series, no. 1.

they are always ready to receive money. Most American educators have little knowledge of these invisible, underworld, mail-order affairs, just as respectable citizens know only through the newspapers of the activities of criminals and the passing of counterfeit money. Very few Chicago people, indeed, have any idea that such great (?) institutions as the "Lincoln-Jefferson University" or the "University of Trinity College" are located in the very heart of the city. These organizations, in fact, seldom advertise their wares in American newspapers, but prefer to work through the mails and through agents. They are inclined, evidently, to favor advertisement in countries far distant from American university centers; such as in India, Italy, South America and Cuba, and especially among the minor clergy whose vanity tempts them to secure some degree in theology or divinity—of which this university is ready to furnish some six or seven varieties.

ACTIVITIES IN ITALY

In 1924, in Venice, one Prof. Dr. Serge Boris Dietrich, associated with two such institutions in selling "American degrees" in Italy, was imprisoned for one year and three months. The American consul, in reporting to the Department of State the trial and conviction of the man, said:

> The press of Venice gave wide publicity to the trial, as the testimony regarding the sale of the diplomas, titles and degrees furnished material therefor. American universities in general, in fact, all American institutions, came in for their ridicule; so that the prestige of American education has suffered somewhat of a shock in Italy at present. The inability of foreigners to differentiate between real universities and such universities as the Oriental University of Washington, D. C., and the American University of Los Angeles, Calif. (which were frequently mentioned in the testimony, owing to Dietrich's having represented them), made it seem natural that the inferiority of American institutions of learning should appear generally manifest to all who heard the testimony or read the press notices. As previously pointed out by this consulate in several of its dispatches of last year, *present conditions, whereby diploma mills of this sort are permitted to exist for the foreign market in degrees of American origin, militate against the entire education system of the United States and its prestige abroad.*[2] [Italics ours.—ED.]

ARE THESE "BIRDS OF THE SAME FEATHER"?

From the foregoing, as well as other evidence, it is apparent that Prof. Dr. Serge Dietrich—sometimes given as Sergei Boris Dietrich—was the acting agent for both the American University of Los Angeles, Calif., and the Oriental University of Washington, D. C. As noted elsewhere, the charter of the latter institution was revoked, and on Jan. 9, 1926, its president, "Bishop" Helmuth P. Holler, was convicted on a charge of conspiracy for the purpose of making fraudulent use of the mails.

EVASION OF IMMIGRATION LAW

There is a suspicion that this traffic in diplomas is also aiding foreigners to evade the American immigration laws which permit the entrance of professional men from foreign countries over and above that country's annual immigration quota. It is not improbable that possessors of diplomas issued by phantom universities such as the "American University," as their character might be unknown to the immigration officers, would be permitted to enter the United States.

DIPLOMA TRAFFIC IN INDIA

Those conducting the Lincoln-Jefferson University and the other members of its brood are evidently doing a land office business in diploma selling in British India. Here again, as in Italy, one of the native agents was a graduate and an agent of the now defunct[3] Oriental University. This agent, Dr. Heramba Nath Chatterjee, openly advertised in the newspapers to the effect that American degrees in almost every subject known to educational bodies could be "arranged" by the "authorized board."

Chatterjee was said to have been also the agent of "The International University of the U. S. A.," which, by "affiliation," is apparently another member of the Lincoln-Jefferson brood. He is said to have occupied a rented room in Calcutta, where he acted as dean and entire faculty of several irregular "temples" and "colleges," including a bogus "Washington Medical College" which he claimed was "affiliated" with an American university—evidently the Lincoln-Jefferson University, of which Chatterjee appears as agent.

ANOTHER AGENT AND FACULTY MEMBER

Dr. Satish Chandra Banerjee, another local representative of the Lincoln-Jefferson University in India, is named in the Lincoln-Jefferson announcements as having been granted an M.D. degree and also as a member of its "faculty and advisory board." According to a report,[4] this agent openly published items in lay newspapers declaring that the Lincoln-Jefferson University "was chartered in Illinois"; "was recognized by the United States government"; "had no correspondence courses in medicine"; "did not grant honorary degrees," and that "the work of the Lincoln-Jefferson University was satisfactory to the 'Indian State Board.'" An investigation, however, brought out the facts that (*a*) "legal charters" in the United States meant very little because any one could easily obtain them and that the lowest type of diploma mills, including those closed by the courts, always have been "legally chartered"; (*b*) not only is the Lincoln-Jefferson University not recognized by the government of the United States, but its name does not appear in the list of recognized universities published by the United States Bureau of Education; (*c*) although the Lincoln-Jefferson University claims to have no correspondence course in medicine, the report of the Secretary of State of the United States says that all the work of the Lincoln-Jefferson University [whatever it may or may not consist of] is "conducted by correspondence"; (*d*) the agent's statement that "it does not grant honorary degrees" is contradicted by the Lincoln-Jefferson University in a letter stating: "We are not giving any course in medicine at all, nor do we grant medical degrees *excepting ad eundem and honorary*" [italics ours; honorary and ad eundem degrees are just as pretentious as earned degrees and will as readily deceive a credulous public.—ED.]; (*e*) the Indian government has no "state board" such as was declared to be "satisfied with the work of the Lincoln-Jefferson University."

NO BRITISH RECOGNITION

The opinion of the General Medical Council of England regarding the Lincoln-Jefferson University is that it is "of more than dubious nature." Furthermore, the Council considers association with this university as "unprofessional conduct" and has demanded an explanation from the British medical men who in any way have been connected with either the International Medical College or the Lincoln-Jefferson University.

USE OF LINCOLN-JEFFERSON PHARMACY DEGREES UNLAWFUL IN NEW YORK

The barter in medical diplomas by American diploma mills has been fairly well safeguarded and made difficult because of the vigilance of the American Medical Association. This probably accounts for the fact that the Lincoln-Jefferson University selected pharmacy as a safer and more remunerative field in which to work. Indeed, of the 536 degrees (at

2. From a report in the Educational Record, January, 1926.

3. The charter of the Oriental University was revoked, Dec. 25, 1923, and on Jan. 9, 1926, "Bishop Helmuth P. Holler, Ph.D., D.Ps.T., LL.D., h.c., its founder, president and corresponding secretary, was given the maximum sentence of two years in jail and a fine of $1,000 by Mr. Justice Stafford of the Supreme Court of the District of Columbia.

4. Indian Medical Gazette, Calcutta.

least) issued by the Lincoln-Jefferson University during the two brief years between September, 1920, and 1922, inclusive, 234 were in pharmacy—a rich field![5] Divinity was the next best field, in which eighty-seven degrees were issued!

Reports show that early in 1924 Dr. Augustus S. Downing, director of professional education in New York, in a letter to the Lincoln-Jefferson University, denied statements made by "Dr." Irving I. Jacobs, dean of this university's school of pharmacy, that its degrees were recognized by the New York Board of Regents. In this letter Dr. Downing states:

"I am in receipt of a special announcement of the Lincoln-Jefferson University; founded 1897; Rev. Dr. John F. B. Walker, President; School of Pharmacy—Post Graduate Department, from which circular I quote:

> We advise that our graduates add the initials "Ill." after our degrees when displaying them on show windows, labels, etc., to show that the degrees were obtained from a university incorporated and chartered in the state of Illinois. This is in accordance with an arrangement entered into between the Lincoln-Jefferson University and the New York Board of Regents represented by Dr. Downing.

"This advertisement must stop at once since no such arrangement was made between the Lincoln-Jefferson University and myself as representing the Board of Regents. Furthermore, at the last session of the legislature a law was enacted which reads as follows:

> "CORRESPONDENCE SCHOOLS. No person, firm or corporation shall conduct in this state a correspondence school unless such person, firm or corporation shall first have secured the approval of the Board of Regents. Such approval shall be secured and granted in accordance with rules and regulations adopted by such board. Violation of this section shall constitute a misdemeanor.

"I am therefore advising all of those who are listed as having received the degree from your institution that such degree cannot be used in this state."

HISTORY OF "DR." JACOBS, DEAN OF PHARMACY

Reports of the activities of "Dr." Irving I. Jacobs[6] are particularly interesting. Besides being one of the deans of the Lincoln-Jefferson University, he also conducted the "Connecticut School of Pharmacy," New Haven, which "obtained degrees for its part-time students from the Chicago diploma mill." Jacobs is said to have graduated about 1914 from the New Jersey College of Pharmacy, and afterward opened the "Hudson Institute of Pharmacy" in a hall room in Jersey City, N. J. He was also listed as an instructor at the "Columbia College of Jersey City," which had catalogues printed, but never functioned, its charter having been revoked by the New Jersey State Board of Education. It is said that Jacobs then started a school of pharmacy of his own in Brooklyn. For a time he is said to have conducted a class in Boston and another in New York, devoting one afternoon a week to each. He is said to look after all mail addressed to the department of pharmacy of the Lincoln-Jefferson University, which is forwarded to him at New Haven.

SUMMARY

The information outlined in the foregoing pages contains facts that can be stated positively, as follows:

1. Three medical diplomas, one from Lincoln-Jefferson University and two from the University of Trinity College, were issued to persons in Japan.

2. Lincoln-Jefferson University, the University of Trinity College and the American University (Los Angeles) have no buildings, no laboratories, no grounds, no libraries or other equipment such as are considered as absolutely essential by bona fide reputable universities.

3. No one of these institutions is named in the list of colleges and universities approved by any standardizing agency deemed reliable by the Council on Medical Education and Hospitals.

4. The headquarters of the first two great (?) institutions consists of two small adjoining rooms in an office building in Chicago; the third is housed in one small upper room in Los Angeles, which served both as the "office" and as the living and sleeping quarters of the "dean." The furniture and total equipment of the first two "universities" consisted only of an ordinary desk and a few chairs, while the room of the Los Angeles institution boasted, in addition, a dilapidated bed.

5. Reliable reports show that Rev. John F. B. Walker, Ph.D., D.D., LL.D., F.R.G.S., and the Rev. A. W. Slade, A.K.C., M.A., D.D., LL.D., the two men at the head of this chain of invisible universities are rectors of Episcopal churches in their home cities—just as the head of the Oriental University reverently signed himself "Bishop."

6. The catalogue of Lincoln-Jefferson University contains the statement that M.D. degrees are "not offered by any reputable school of correspondence" and that "we are not prepared to offer courses leading to these degrees"; nevertheless, behold the "degrees in medicine" issued to three Japanese, reproduced in this article!

7. The institution is not loath to mislead the public, as shown by the following statement in its announcement: "All diplomas are issued without mention that any part of the work was taken by correspondence."

8. This "university" is considered as "of more than dubious nature" by the General Medical Council of England.

9. Agents of this group of institutions in Italy and India have openly advertised in the newspapers—not the educational advantages, but the degrees of these universities—just as they would advertise any other merchandise offered for sale.

10. The methods followed by the Lincoln-Jefferson University in the distribution and barter in diplomas are very similar to, if not identical with, those followed by the Oriental University which, Dec. 25, 1924, was closed by legal process and whose president, "Bishop" H. P. Holler, Jan. 9, 1926, was convicted and given the maximum penalty, two years in jail and a fine of $1,000.

11. The relationship of the Lincoln-Jefferson University and its affiliated institutions with the now defunct Oriental University is further suggested by the fact that agents or salesmen of the one have also represented the other and have used the same flagrant methods of advertising in connection with the two institutions.

12. Evidence shows that in the United States the Lincoln-Jefferson University's most prolific field of activity was in the barter of pharmacy degrees carried on in New York, until action by the Board of Regents and publicity by the *Pharmaceutical Era* put a stop to it.

13. Mention is made of numerous institutes, colleges, schools and universities in the literature of the Lincoln-Jefferson University relating to law, theology, medicine, pharmacy, etc., many of which, if existing at all, were created through the lack of adequate safeguards in this country over the chartering of educational institutions. Among the institutions named are several known to be of extremely low grade educationally, and for several others records show evidence of misleading or disreputable practices.

14. According to the Lincoln-Jefferson University's announcements, in slightly more than two years, degrees were issued to 536 different persons, these degrees being of at least thirty-eight varieties, others, evidently, to be had for the asking—and, of course, the fee. The title of "professor" was also granted in several instances. It is interesting to note that degrees were granted not only in "divinity," but also in "theology," in "sacred theology," altogether eighty-seven having been granted under these labels. Degrees also were granted in "law," "laws," "juris," "civil law" and "commercial law."

15. Needless to say, neither these "universities" nor their degrees are given recognition by any of the high grade, well known or established colleges or universities.

5. This "university's" activities in the barter of pharmacy degrees are further shown in the Pharmaceutical Era of Jan. 19, 1924.
6. Pharmaceutical Era, Jan. 19, 1924.

STATE BOARD STATISTICS FOR 1925

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1534 to 1541 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1925. All state boards sent in reports, and the statistics are complete. The data in these tables are presented in the same manner as heretofore. The majority of graduates take the examination in the state in which the college is located, as shown by the dark diagonal zone of figures passing from the upper left to the lower right corner of each table. The marginal numbers enable one to follow readily the line for any college.

Graduates of All Years Examined in 1925

Table A shows the results for all candidates who took examinations in 1925, regardless of the years in which they graduated. This shows that altogether 5,956 candidates were examined last year, or 606 more than in 1924, and 1,258 more than in 1923. Since 1906 and until 1919, there was the expected decrease in the totals examined, owing chiefly to the general reorganization of medical education and, prior to 1919, in the decreasing numbers of students and graduates. Since 1918 there has been a constant increase, except in 1922, when the decrease was due to the small number, 2,529—the war class—that graduated in that year. Of the 5,404 examined in 1925, 9.3 per cent failed, as compared with 11.9 in 1924.

There were sixty-eight medical colleges in the United States granting degrees in 1925 which had graduates examined. This is eighty-five less than in 1905, when graduates from 153 medical colleges were examined. The statistics covering schools that have ceased to exist are included in the line for "miscellaneous colleges."

Table 1.—*Foreign Physicians Examined*

Year	Canada			Other Foreign Graduates			Totals		
	Examined	Failed	Per cent	Examined	Failed	Per cent	Examined	Failed	Per cent
1917	34	8	23.5	79	37	46.8	113	45	39.8
1918	29	10	34.5	45	17	37.8	74	27	36.5
1919	71	22	31.0	67	30	44.8	138	52	37.7
1920	85	21	24.7	86	33	38.4	171	54	31.6
1921	84	20	23.8	178	77	43.2	262	97	33.2
1922	73	9	12.3	186	76	40.9	259	85	32.4
1923	140	17	12.1	371	165	44.5	511	182	35.6
1924	212	14	6.6	591	231	39.1	803	245	30.5
1925	319	27	8.4	523	205	39.2	842	232	27.6
Totals	1,047	148	14.1	2,126	871	41.4	3,173	1,019	32.1

Applicants Examined from Canada and Abroad

Graduates of Canadian medical schools were examined last year in twenty-nine states. Last year 319 were examined, as compared with 212 in 1924, 140 in 1923, and eighty-two in 1922. The largest number, seventy, were examined in New York, the next largest number being forty-one examined in Michigan. The figures for each college are given so as to show the successes and failures of its graduates at the examinations. Of the 319 candidates examined, twenty-seven, or 8.4 per cent, failed.

The number of foreign physicians seeking licensure in the United States has been steadily increasing since the World War. There were 523 in 1925, exclusive of those from Canada, as compared with 591 in 1924, 371 in 1923 and 186 in 1922. Of the 523 examined in 1925, 205, or 39.2 per cent, failed. This year, foreign graduates were examined in thirty-one states, the largest number, 236, being examined in New York, of whom ninety-seven, or 69.8 per cent, failed. From all foreign countries, including Canada, 842 candidates were examined, of whom 610 passed and 232, or 27.6 per cent, failed. As shown in table 1, the number of applicants from foreign countries has rapidly increased since the conclusion of the World War.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, the reader must keep in mind (*a*) the number of graduates examined; (*b*) the number of states in which a school's graduates were examined, and (*c*) the character of the board making the examination and the methods employed. Some boards refuse to examine graduates of inferior medical colleges, while others admit not only graduates of low-grade medical colleges but also osteopaths to the physicians' and surgeons' examination. Some boards hold fairly severe examinations, which include practical laboratory and clinical tests, or they mark the papers strictly, while others are more lenient. It is particularly important, in forming conclusions based on these statistics, to note for each college the states in which its graduates *are not admitted to examinations*, information set forth in table D. Very few state boards now admit graduates of low-grade medical schools to their examinations.

Undergraduates and Osteopaths Examined as Physicians During 1925

For the last five years, the few undergraduates examined have been accidental or are exceptional instances. In 1925, seven undergraduates were examined. One undergraduate each was licensed by examination in Arizona,[1] Arkansas,[2] Colorado[3] and Kentucky, while two failed in Colorado and one in Illinois. In 1906, by contrast, there were 703 undergraduates examined, of whom 342 were licensed. The door is now carefully guarded, therefore, against those whose medical training is known to be incomplete. Several boards, however, continue to register as physicians and surgeons, by examination or by reciprocity, graduates of osteopathic colleges, which, if measured by the same standards as medical schools, could be graded only low in class C. Of the fifty-five osteopaths that were examined as physicians in four states in 1925, twenty-three were licensed—thirteen in Massachusetts, five in Texas, three in Colorado, and two in Wisconsin. In two of these states—Colorado and Texas—the boards refuse to recognize graduates of class C medical schools (see table D); nevertheless, this year Colorado examined thirty-one graduates of class C medical schools, of whom seventeen were registered, while Colorado and Texas examined graduates of osteopathic colleges, which are nothing more than low type medical schools.

Recent Graduates Examined During 1925

Table B gives the results for graduates of 1921 to 1925, inclusive, who were examined during 1925. This table deals with recent graduates, and is the fairest basis for comparison between colleges. Of all candidates examined in 1925, 4,958,

(CONTINUED ON PAGE 1541)

1. The applicant in Arizona held a diploma from the Pacific Medical College, which official reports designate as a diploma mill.
2. The nongraduate licensed in Arkansas is reported as a graduate in 1899 of "Grant University," Chattanooga, Tenn. The medical department of this university was the Chattanooga Medical College, a regular and not an eclectic institution. The complete official alumni list of this college does not include the name of this applicant.
3. In Colorado the board is required to admit to its examinations any applicant whether he is a graduate or not. It is very seldom that one passes the examination.

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F	22 Minnesota P	22 Minnesota F
	ARKANSAS																																												
1	University of Arkansas Medical Department					17	0											1	0															1	0										
	CALIFORNIA																																												
2	College of Medical Evangelists			1	0			59	2							1	0					1	0																						
3	Stanford University School of Medicine							26	0																													1	0						
4	University of California Medical School			1	0			47	0																																				
	COLORADO																																												
5	University of Colorado School of Medicine							2	0	27	0											1	0																	2	0				
	CONNECTICUT																																												
6	Yale University School of Medicine											9	0			1	0																	1	0					2	0				
	DISTRICT OF COLUMBIA																																												
7	Georgetown University School of Medicine											1	0			14	0	1	0					1	1											1	0								
8	George Washington University Medical School							3	0							31	0	4	0					1	0															2	0				
9	Howard University School of Medicine	1	0					1	1							25	0							1	1	1	0			2	0							2	1			2	0		
	GEORGIA																																												
10	Emory University School of Medicine	8	0															61	3	56	0			1	0																				
11	University of Georgia Medical Department																	29	7	25	0																								
	ILLINOIS																																												
12	Chicago Medical School																							16	7																				
13	Loyola University School of Medicine							1	0									3	1			1	0	20	2			1	0	1	0			1	0			0	1				
14	Northwestern University Medical School							7	0							1	0	10	3			1	0	38	0	2	0	3	0	1	0											6	0	4	0
15	Rush Medical College (University of Chicago)							13	1							2	0	13	1					74	0	1	0	1	0	2	0	1	0					1	0			1	0	4	0
16	University of Illinois College of Medicine							11	0									3	2					31	0	1	0	3	0	1	0											1	0	2	0
	INDIANA																																												
17	Indiana University School of Medicine							1	0									9	0					1	0	77	0													1	0				
	IOWA																																												
18	State University of Iowa College of Medicine							3	0									1	0			2	0	2	0			71	0	1	0													1	0
	KANSAS																																												
19	University of Kansas School of Medicine																	1	0											31	0							1	0						
	KENTUCKY																																												
20	University of Louisville School of Medicine																	8	3					2	0	4	0					49	0							1	0			1	0
	LOUISIANA																																												
21	Tulane University of Louisiana School of Medicine	9	0			1	0	3	0									20	3	1	0			1	0					1	0			60	0			1	0						
	MARYLAND																																												
22	Johns Hopkins University Medical Department							2	0			1	0			6	0	7	0					1	0	1	0	1	0									30	0	1	1			1	0
23	Univ. of Md. School of Med. and Coll. of P. & S.											3	0					5	0							1	0											52	0						
	MASSACHUSETTS																																												
24	Boston University School of Medicine							1	0			3	2					3	0																	6	0			14	0	1	0		
25	College of Physicians and Surgeons, Boston													1	1																									3	2				
26	Harvard University Medical School							9	0			4	0			1	0	6	0																	3	0			22	0	4	0	1	0
27	Tufts College Medical School							1	1			9	2			3	0	8	0															1	0	7	0			53	0	3	0		
28	Middlesex College of Medicine and Surgery																																							5	9					
	MICHIGAN																																												
29	University of Michigan Medical School							6	2							1	0	4	1					3	0	1	0											1	0	1	0	145	0		
30	Detroit College of Medicine and Surgery																																									50	0		
	MINNESOTA																																												
31	University of Minnesota Medical School							3	0									3	0					2	0			1	0															103	0
	MISSOURI																																												
32	Kansas City College of Medicine and Surgery					19	0			3	2																													0	1				
33	Kansas City University of Physicians and Surgeons									5	1																																		
34	St. Louis College of Physicians and Surgeons							1	1	5	5													1	0							1	0	1	0					9	18				
35	St. Louis University School of Medicine							2	0	1	0							3	0					16	0	1	0			2	0									2	0	4	0		
36	Washington University School of Medicine					1	0	3	0	1	0			1	0	1	0	2	0					10	0	1	0	1	0	7	0									1	0	2	0		
	NEBRASKA																																												
37	Creighton University College of Medicine							1	0							1	0	1	0											2	0													
38	University of Nebraska College of Medicine							2	1									2	0											2	0													1	0
	NEW YORK																																												
39	Albany Medical College																	2	0																					1	0				
40	University of Buffalo Medical Department							1	0			1	0			1	0	2	1					1	0													2	0					1	0
41	Columbia University College of Phys. and Surgs.							3	0			1	0					3	0	1	0															1	0								
42	Cornell University Medical College											1	0					3	0											1	0									1	0				
43	Long Island College Hospital											3	0					5	0									1	0																
44	New York Homeo. Med. Coll. and Flower Hosp.															1	0	1	0																										
45	University and Bellevue Hospital Medical College							1	0			1	0					2	0	1	0															1	0								
46	Syracuse University College of Medicine																	1	0					2	0																				
	OHIO																																												
47	Eclectic Medical College					1	0											0	2							2	0					1	0									0	1
48	University of Cincinnati College of Medicine							1	0							1	0	6	0					1	0	1	0															1	0
49	Western Reserve University School of Medicine							1	0									2	0											1	0														
50	Ohio State University College of Medicine							1	0									4	0																										
	OKLAHOMA																																												
51	University of Oklahoma School of Medicine																							1	0					2	0			2	0										
	OREGON																																												
52	University of Oregon Medical School							11	1															2	0																				
	PENNSYLVANIA																																												
53	Hahnemann Medical College and Hosp. of Phila.							2	0	0	1							1	0																	2	0								
54	Jefferson Medical College of Philadelphia							5	0	1	0	1	0	2	0	1	0	12	5			2	0	2	0	1	0			2	0							6	0				
55	Temple University School of Medicine													0	1			1	0																			1	0				
56	University of Pennsylvania School of Medicine	1	0					11	0									15	2					1	0											1	0	1	0	1	0	1	0	2	0
57	Woman's Medical College of Pennsylvania															0	1	0	1																					1	0				
58	University of Pittsburgh School of Medicine																	2	0																										
	SOUTH CAROLINA																																												
59	Medical College of the State of South Carolina																	14	0													1	0			1	0								
	TENNESSEE																																												
60	University of Tennessee College of Medicine	2	0			3	0	1	0							1	0	4	1															3	0								
61	Meharry Medical College	1	0			1	0											1	3					6	4	1	0			2	0	1	0	3	1			1	0	0	1		
62	Vanderbilt University School of Medicine	1	0			1	0	1	1									26	6					1	0																		
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

P = Passed; F = Failed.

	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. In	Marginal Number
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
								7 1																			1 0	28	27	1	3.6	5	1
									1 0		1 0		1 0															67	65	2	3.0	7	2
								1 0					1 0										1 0		1 0			27	27	0	0.0	2	3
1 0								1 0																			1 0	52	52	0	0.0	6	4
1 0						1 0		8 0			2 0																	35	35	0	0.0	7	5
						5 0		15 0	1 0					2 0	1 0													25	25	0	0.0	8	6
2 0						2 1		11 0						1 0								3 0			1 0		1 0	46	45	1	2.2	12	7
								12 4	5 0		3 0			4 2		1 0						6 0		3 0	1 0		1 0	58	58	0	0.0	10	8
								5 0																1 0				85	75	10	11.8	19	9
								2 0	1 0					1 0													1 0	136	133	3	2.2	7	10
																											1 0	66	59	7	10.6	5	11
																												23	16	7	30.4	1	12
1 0 1 0						1 0		1 0			2 0		1 0				1 0							1 0			1 0	42	38	4	9.5	17	13
6 0						1 0		2 0		2 0	4 0	1 0	2 2	3 0									3 0		6 0	1 0	1 0	112	107	5	4.5	23	14
1 0 1 0								8 1		2 0	1 0		3 0	2 0			3 0						2 0		6 0		1 0	146	143	3	2.1	22	15
1 1 1 0								3 0	1 0	2 1	1 0		2 2	2 0			2 0						1 0		7 0			82	76	6	7.3	19	16
											1 0			1 0													91	91	0	0.0	7	17
1 0								2 1					1 1															87	85	2	2.3	10	18
4 0 2 0 0 1																												40	39	1	2.5	6	19
2 0								1 0				1 0 0 1							1 0	1 0	1 0	1 0		2 0				79	75	4	5.1	15	20
								8 1	1 0					1 0				2 0	2 0			1 0		1 0	1 0		2 0	128	124	4	3.1	19	21
2 0								6 0	1 0		3 0			2 0				1 0				1 0					68	67	1	1.5	17	22
						1 0		16 1	12 0		3 0			7 1										7 0			2 0	111	109	2	1.8	11	23
					2 0	1 0		18 2								1 0												54	50	4	7.4	10	24
1 0			1 0					6 0			5 0		1 0	1 0	4 0	1 0			2 0	1 0	1 0			1 0	2 0		2 0	8	5	3	37.5	3	25
					1 0	2 0		28 1			1 0			2 0	5 0						1 0							80	80	0	0.0	22	26
																												129	125	4	3.1	15	27
1 0								12 1			2 0			5 0										1 0			14	5	9	64.3	1	28
																												187	183	4	2.1	13	29
																								1 0				51	51	0	0.0	2	30
1 0			1 0					3 0			1 0			1 0			1 0							3 0				126	126	0	0.0	14	31
																												25	22	3	12 0	3	32
																		2 0										6	5	1	16.7	1	33
0 65 4						1 0		7 0			11 0			2 0			2 0							1 0	2 0	1 0	2 0	44	20	24	54.5	7	34
52 3 1 0											1 0	1 0	1 0		1 0		1 0			2 0		1 0		1 0	5 1		1 0	130	126	4	3.1	19	35
																												103	99	4	3.9	24	36
1 0 1 0 33 1								1 0			1 0 1 0						1 0							2 0				47	46	1	2.1	12	37
3 0 85 0						2 0		3 0						3 0				1 0							1 0			106	105	1	0.9	11	38
								15 0																				18	18	0	0.0	3	39
								49 0			1 0			4 0														64	63	1	1.6	10	40
1 0						4 0		83 0					1 0	1 0	1 0			1 0				1 0					2 0	104	104	0	0.0	14	41
2 0						1 0		41 1					1 0	2 0														54	53	1	1.9	9	42
			1 0					93 2																				105	103	2	1.9	5	43
						1 0		32 1																				36	35	1	2.8	4	44
								101 1						1 0										1 0				110	109	1	0.9	8	45
								37 0																				40	40	0	0.0	3	46
0 1								14 3			21 1			2 0														48	41	7	14.6	8	47
1 0			1 0					3 0	3 0		54 0			1 0										1 0				74	74	0	0.0	12	48
								3 0			39 0			1 0		1 0												48	48	0	0.0	7	49
								4 1	1 1		82 0			1 0										1 0			1 0	97	95	2	2.1	8	50
								4 0				31 0							2 0								1 1	44	43	1	2.3	7	51
								1 0					32 2										2 0					51	48	3	5.9	5	52
1 0				1 0		7 0		5 2			3 0			31 0	1 0					3 0		2 0		3 0		1 0 1 0	59	56	3	5.1	12	53
1 0						9 0		11 0	14 0		4 0			87 0	4 0			1 0							1 0			179	174	5	2.8	23	54
0 6 0														14 2											1 0		1 0	21	18	3	14.3	6	55
						6 0		10 0	14 0		1 0			61 0	1 0				3 0	4 0				1 0	7 0	1 0	1 0	158	156	2	1.3	23	56
								5 2			4 0			7 2	1 0													24	18	6	25.0	7	57
								1 0	1 0		8 0			39 1	1 0				1 0					1 0				46	45	1	2.2	8	58
								1 0	3 0					1 0		29 0												50	50	0	0.0	7	59
0								2 2						1 1		1 0		51 0						1 0				78	74	4	5.1	13	60
0 4 0									2 0		3 3			1 2		3 1		20 0	2 1			1 0		6 0				76	60	16	21.1	20	61
1 0								2 0	2 0		1 0			0 1				39 0										83	75	8	9.6	11	62
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

TABLE A—PHYSICIANS EXAMINED

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F
	TEXAS																																										
63	Baylor University College of Medicine																							1	0																			
64	University of Texas School of Medicine							1	0									1	0																									
	VERMONT																																											
65	University of Vermont College of Medicine											1	0					1	1																	1	0		1	0				
	VIRGINIA																																											
66	Medical College of Virginia															2	0	10	0	1	0																							
67	University of Virginia Department of Medicine	2	0													2	0	7	0																			1	0		1	0		
	WISCONSIN																																											
68	Marquette University School of Medicine																							1	0																			
	PHILIPPINE ISLANDS																																											
69	University of the Philippines, Manila																																											
70	University of St. Thomas, Manila																			1	0																							
	CANADA																																											
71	Dalhousie University Faculty of Medicine																																			1	0			2	0	1	0
72	Queen's University Faculty of Medicine							1	1			4	0					3	1					1	0																	2	0
73	University of Toronto Faculty of Medicine	1	0					7	2	1	0	1	0			2	0	8	1					2	0											1	0	1	0	1	1	24	0
74	University of Western Ontario Medical School							2	0									1	0					0	1																	2	0
75	McGill University Faculty of Medicine							0	1			2	2					2	0									1	0													4	0
76	University of Montreal Medical Faculty											0	1																							9	0	2	0	3	0	10	0
77	Laval University Faculty of Medicine							1	1																											2	3			1	2		
78	University of Manitoba Faculty of Medicine							4	0															2	0													1	0	0	1		
79	Foreign Colleges							26	20	2	0	1	6	1	0	3	0	4	2					29	18			3	0			2	1			3	0	6	4	4	8	6	2
80	Miscellaneous Medical Colleges	0	1	2	0	3	0	4	2	2	1	2	1			2	0	35	50			1	0	21	4			2	1	3	0	1	1	0	1			1	0	3	2	3	0
81	Undergraduates and Osteopaths			1	0	1	0			4	7													0	1							1	0							13	29		
82	Totals by States	27		5		48		331		69		63		5		107		537		86		9		335		96		90		65		60		74		43		121		214		270	
83	Totals — Examined — Passed	26		5		48		293		52		49		4		105		437		86		9		296		96		89		65		58		72		40		115		146		268	
84	Totals — Examined — Failed	1		0		0		38		17		14		1		2		100		0		0		39		0		1		0		2		2		3		6		68		2	
85	Percentage of Failures	3.7		0.0		0.0		11.5		24.6		22.2		20.0		1.9		1.9		0.0		0.0		11.6		0.0		1.1		0.0		3.3		2.7		7.0		5.0		31.8		0.7	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21	

P = Passed; F = Failed.

TABLE B—GRADUATES OF 1921 TO 1925, INCLUSIVE

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F	22 Minnesota P	22 Minnesota F
	ARKANSAS																																												
1	University of Arkansas Medical Department					16	0											1	0																										
	CALIFORNIA																																												
2	College of Medical Evangelists			1	0			59	2							1	0					1	0																						
3	Stanford University School of Medicine							26	0																															1	0				
4	University of California Medical School			1	0			46	0																																				
	COLORADO																																												
5	University of Colorado School of Medicine							1	0	27	0																													1	0				
	CONNECTICUT																																												
6	Yale University School of Medicine											9	0			1	0													1	0							2	0				
	DISTRICT OF COLUMBIA																																												
7	Georgetown University School of Medicine											1	0			14	0	1	0																	1	0			1	0				
8	George Washington University Medical School							2	0							31	0							1	0													2	0						
9	Howard University School of Medicine	1	0					1	1							25	0							1	0	1	0			2	0							2	1			2	0		
	GEORGIA																																												
10	Emory University School of Medicine	8	0															49	1	56	0			1	0																				
11	University of Georgia Medical Department																	16	0	25	0																								
	ILLINOIS																																												
12	Chicago Medical School																							16	7																				
13	Loyola University School of Medicine							1	0									2	0					20	2			1	0	1	0			1	0			0	1				
14	Northwestern University Medical School							7	0									7	0					38	0	2	0	3	0	1	0									6	0	4	0
15	Rush Medical College (University of Chicago)							12	0							2	0	2	0					74	0	1	0	1	0	2	0	1	0							1	0	4	0
16	University of Illinois College of Medicine							9	0									1	0					31	0	1	0	3	0											1	0	2	0
	INDIANA																																												
17	Indiana University School of Medicine							1	0									7	0					1	0	77	0																		
	IOWA																																												
18	State University of Iowa College of Medicine							3	0									1	0			2	0	2	0			71	0	1	0													1	0
	KANSAS																																												
19	University of Kansas School of Medicine																													31	0							1	0						
	KENTUCKY																																												
20	University of Louisville School of Medicine																	1	0					2	0	4	0					48	0											1	0
	LOUISIANA																																												
21	Tulane University of Louisiana School of Medicine	9	0					3	0									11	0	1	0			1	0					1	0			60	0			1	0						
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

P = Passed; F = Failed.

	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
								2 0											26 0								1 0	31	31	0	0.0	5	63
			1 0					1 0						1 0					59 0									64	64	0	0.0	6	64
	1 0							7 0							1 0						38 0							52	51	1	1.9	8	65
						1 0		5 0	11 0					3 0								36 0		15 0				84	84	0	0.0	9	66
									5 0							1 0						31 0		1 0				55	55	0	0.0	10	67
	1 0																								49 1			52	51	1	1.9	3	68
																											19 0	19	19	0	0.0	1	69
														1 0													30 9	41	32	9	22.0	2	70
								2 0			1 0			1 0														8	8	0	0.0	6	71
						1 0	1 0	15 2		1 0				1 0														37	32	5	13.5	11	72
		1 0						24 2		1 0	13 0			17 0						1 0		1 0	2 1	1 0	1 0			118	111	7	5.9	22	73
	1 0					5 0		4 0			5 0		1 0										1 0	0 1	2 0			21	20	1	4.8	10	74
								25 2			4 0		1 0	5 0							8 0		4 0	1 0	3 0		1 0	93	88	5	5.4	20	75
										0 1																		9	3	6	66.7	3	76
										10 0		1 0	1 0										6 0	2 0				4	1	3	75.0	3	77
																												29	29	0	0.0	9	78
			1 2	1 0		20 4		139 97	0 1	18 9	2 0	1 0	1 0	16 9	4 2		2 0		7 1		1 0		2 0	2 7	10 8		1 4	523	318	205	39.2	31	79
	3 2	1 1	0 1			2 1		5 5			1 0		0 1	4 3			1 0	1 0			1 0	1 0	1 1	0 1	1 2		3 2	243	159	84	34.7	32	80
																			5 3						2 0			62	29	33	53.2	9	81
	176	14	129	2	3	80	1	1069	81	21	319	38	60	359	27	39	14	119	115	13	52	87	29	66	127	4	94	5956	....	....	.....	...	82
	165	13	124	2	3	74	1	933	80	18	306	38	51	335	25	38	14	119	110	13	52	87	27	57	115	4	78	....	5404	....	.....	...	83
	11	1	5	0	0	6	0	136	1	3	13	0	9	24	2	1	0	0	5	0	0	0	2	9	12	0	16	....	....	552	.....	...	84
	6.2	7.2	3.9	0.0	0.0	7.5	0.0	12.7	1.2	14.3	4.1	0.0	15.0	6.7	7.5	2.6	0.0	0.0	4.3	0.0	0.0	0.0	6.9	13.6	9.4	0.0	17.0	....	....	....	9.3	...	85
	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

MINED BY STATE BOARDS DURING 1925

	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						
	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
								7 1																			1 0	26	25	1	3.8	4	1
									1 0				1 0															66	64	2	3.0	6	2
								1 0					1 0															27	27	0	0.0	2	3
	1 0							1 0															1 0		1 0			51	51	0	0.0	6	4
	1 0					1 0		7 0			2 0																1 0	32	32	0	0.0	6	5
						5 0		15 0	1 0					2 0	1 0													24	24	0	0.0	8	6
	2 0					2 1		9 0						1 0								3 0		1 0				44	44	0	0.0	11	7
								11 3	5 0		3 0			4 2		1 0						6 0		3 0	1 0		1 0	51	51	0	0.0	9	8
								5 0																				82	74	8	9.8	19	9
								2 0	1 0															1 0				122	121	1	0.8	7	10
																											1 0	45	45	0	0.0	5	11
		1 0				1 0		1 0			2 0		1 0				1 0											23	16	7	30.4	1	12
	0 5 0					1 0		2 0		2 0	4 0	1 0	1 1	3 0													1 0	37	34	3	8.1	14	13
	1 0							8 1		2 0	1 0		3 0	2 0			3 0					2 0		6 0		1 0	99	98	1	1.0	20	14
	1 0							2 0	1 0	2 0	1 0		0 1	2 0			1 0					1 0		7 0		1 0	130	129	1	0.8	20	15
											1 0			1 0													67	66	1	1.5	17	16
													1 1															88	88	0	0.0	6	17
	3 0	2 0	0 1																									85	84	1	1.2	10	18
	1 0							1 0				1 0	0 1															38	37	1	2.6	5	19
																		1 0	1 0			1 0		2 0				65	64	1	1.5	13	20
								7 1	1 0					1 0			2 0	1 0				1 0		1 0	1 0		1 0	111	110	1	0.9	18	21
	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

Marginal Number	NAME OF COLLEGE	1 Alabama P	1 Alabama F	2 Arizona P	2 Arizona F	3 Arkansas P	3 Arkansas F	4 California P	4 California F	5 Colorado P	5 Colorado F	6 Connecticut P	6 Connecticut F	7 Delaware P	7 Delaware F	8 Dist. Columbia P	8 Dist. Columbia F	9 Florida P	9 Florida F	10 Georgia P	10 Georgia F	11 Idaho P	11 Idaho F	12 Illinois P	12 Illinois F	13 Indiana P	13 Indiana F	14 Iowa P	14 Iowa F	15 Kansas P	15 Kansas F	16 Kentucky P	16 Kentucky F	17 Louisiana P	17 Louisiana F	18 Maine P	18 Maine F	19 Maryland P	19 Maryland F	20 Massachusetts P	20 Massachusetts F	21 Michigan P	21 Michigan F
	MARYLAND																																										
22	Johns Hopkins University Medical Department							2	0			1	0			5	0	4	0					1	0	1	0											29	0	1	0		
23	Univ. of Md. School of Med. and Coll. of P. & S.											3	0					1	0							1	0											52	0				
	MASSACHUSETTS																																										
24	Boston University School of Medicine							1	0			3	2					2	0																	6	0			14	0	1	0
25	College of Physicians and Surgeons, Boston																																							3	2		
26	Harvard University Medical School							9	0			4	0					1	0																	3	0			32	0	4	0
27	Tufts College Medical School							1	0			9	2			3	0	3	0																	7	0			53	0	3	0
28	Middlesex College of Medicine and Surgery																																							5	9		
	MICHIGAN																																										
29	University of Michigan Medical School							6	2							1	0	2	0					3	0	1	0											1	0			145	0
30	Detroit College of Medicine and Surgery																																									49	0
	MINNESOTA																																										
31	University of Minnesota Medical School							3	0									2	0					2	0			1	0							7							
	MISSOURI																																										
32	Kansas City College of Medicine and Surgery					19	0			3	2																													0	1		
33	Kansas City University of Physicians and Surgeons									4	1																																
34	St. Louis College of Physicians and Surgeons							1	1	5	5																					1	0							9	18		
35	St. Louis University School of Medicine							2	0	1	0							3	0					15	0	1	0			2	0									2	0
36	Washington University School of Medicine							3	0	1	0			1	0	1	0	2	0					10	0	1	0	1	0	7	0									1	0
	NEBRASKA																																										
37	Creighton University College of Medicine							1	0							1	0													2	0											
38	University of Nebraska College of Medicine							2	1									2	0											2	0											
	NEW YORK																																										
39	Albany Medical College																																					2	0				
40	University of Buffalo Medical Department							1	0			1	0																														
41	Columbia University College of Phys. and Surgs.							3	0			1	0							1	0																						
42	Cornell University Medical College											1	0					1	0											1	0									1	0		
43	Long Island College Hospital											3	0					3	0																								
44	New York Homeo. Med. Coll. and Flower Hosp.															1	0	1	0																								
45	University and Bellevue Hospital Medical College							1	0									1	0	1	0															1	0						
46	Syracuse University College of Medicine																	1	0					2	0																		
	OHIO																																										
47	Eclectic Medical College					1	0											0	1							2	0					1	0								
48	University of Cincinnati College of Medicine							1	0							1	0	4	0					1	0	1	0																
49	Western Reserve University School of Medicine							1	0									1	0											1	0												
50	Ohio State University College of Medicine							1	0									2	0																								
	OKLAHOMA																																										
51	University of Oklahoma School of Medicine																							1	0					2	0			2	0								
	OREGON																																										
52	University of Oregon Medical School							11	1															2	0																		
	PENNSYLVANIA																																										
53	Hahnemann Medical College and Hosp. of Phila.							2	0																											1	0						
54	Jefferson Medical College of Philadelphia							4	0	1	0	1	0	2	0			5	0			1	0	2	0	1	0											6	0				
55	Temple University School of Medicine																																					1	0				
56	University of Pennsylvania School of Medicine	1	0					11	0									5	0					1	0											1	0	1	0			1	0
57	Woman's Medical College of Pennsylvania																																							1	0		
58	University of Pittsburgh School of Medicine																	1	0																								
	SOUTH CAROLINA																																										
59	Medical College of the State of South Carolina																	7	0													1	0			1	0						
	TENNESSEE																																										
60	University of Tennessee College of Medicine	2	0			3	0	1	0							1	0	2	0															3	0								
61	Meharry Medical College	1	0															0	2							2	1	0		2	0	1	0	3	0			1	0	0	1		
62	Vanderbilt University School of Medicine	1	0					0	1									12	0					1	0																		
	TEXAS																																										
63	Baylor University College of Medicine																							1	0																		
64	University of Texas School of Medicine							1	0																																		
	VERMONT																																										
65	University of Vermont College of Medicine											1	0																							1	0			1	0		
	VIRGINIA																																										
66	Medical College of Virginia															1	0	3	0	1	0																						
67	University of Virginia Department of Medicine	2	0													2	0	5	0																			1	0				
	WISCONSIN																																										
68	Marquette University School of Medicine																							1	0																		
	PHILIPPINE ISLANDS																																										
69	University of the Philippines, Manila																																										
70	University of St. Thomas, Manila																																										
	CANADA																																										
71	Dalhousie University Faculty of Medicine																																			1	0			2	0	1	0
72	Queen's University Faculty of Medicine											4	0																													1	0
73	University of Toronto Faculty of Medicine							3	0	1	0	1	0			2	0	1	0					2	0											1	0	1	0	1	1	19	0
74	University of Western Ontario Medical School							1	0																																	3	0
75	McGill University Faculty of Medicine											2	2															1	0							8	0	2	0	3	0	9	0
76	University of Montreal Medical Faculty											0	1																							2	3			1	2		
77	Laval University Faculty of Medicine																																							0	1		
78	University of Manitoba Faculty of Medicine							3	0															2	0													1	0				
79	Foreign Colleges							8	8			1	4			3	0	1	0					14	9			1	0			1	1			2	0	4	3	1	3
80	Miscellaneous Medical Colleges									0	1	2	0					0	1			1	0	17	0																	1	0
81	Undergraduates and Osteopaths																																										
82	Totals by States	2		2		39		272		52		50		3		96		182		85		5		280		96		83		59		55		69		39		115		159		254	
83	Totals — Examined — Passed	25		2		39		255		43		48		3		96		177		85		5		269		96		83		59		54		69		36		110		121		254	
84	Totals — Examined — Failed	0		0		0		17		9		11		0		0		5		0		0		28		0		0		0		1		0		3		5		38		0	
85	Percentage of Failures	0.0		0.0		0.0		6.3		17.3		19.3		0.0		0.0		2.7		0.0		0.0		6.9		0.0		0.0		0.0		1.8		0.0		7.7		4.3		23.9		0.0	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21	

P = Passed; F = Failed.

23 Mississippi	24 Missouri	25 Montana	26 Nebraska	27 Nevada	28 New Hampshire	29 New Jersey	30 New Mexico	31 New York	32 North Carolina	33 North Dakota	34 Ohio	35 Oklahoma	36 Oregon	37 Pennsylvania	38 Rhode Island	39 South Carolina	40 South Dakota	41 Tennessee	42 Texas	43 Utah	44 Vermont	45 Virginia	46 Washington	47 West Virginia	48 Wisconsin	49 Wyoming	50 U. S. Territories and Possessions	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
	1 0					1 0		3 0	1 0		3 0			2 0													2 0	55	55	0	0.0	14	22
								14 0	12 0		3 0			6 1									7 0					103	102	1	1.0	11	23
					2 0	1 0		18 2																				52	48	4	7.7	9	24
																												5	3	2	40.0	1	25
	1 0		1 0			2 0		6 0			4 0		1 0	1 0	4 0	1 0			2 0	1 0	2 0			1 0	2 0		1 0	72	72	0	0.0	21	26
								28 1			1 0			2 0	3 0						1 0		1 0					119	116	3	2.5	13	27
																												14	5	9	64.3	1	28
																									1 0			181	178	3	1.7	12	29
	1 0							11 1			2 0			4 0										1 0			50	50	0	0.0	2	30
																												125	125	0	0.0	14	31
	1 0		1 0					3 0			1 0			1 0			1 0			1 0			2 0	3 0								
																												25	22	3	12.0	3	32
																												5	4	1	20.0	1	33
																		2 0										42	18	24	57.1	5	34
1 0	65 4					1 0		5 0			11 0			2 0			2 0						1 0	2 0	1 0	2 0		127	123	4	3.1	19	35
	52 3	1 0										1 0	1 0							2 0		1 0	1 0	5 1		1 0		90	95	4	4.0	20	36
																												45	44	1	2.2	10	37
	1 0	1 0	33 1			2 0		1 0				1 0						1 0					2 0					106	105	1	0.9	11	38
		3 0	85 0					3 0						3 0					1 0													
								14 0																				14	14	0	0.0	1	39
								48 0			1 0			2 0														56	56	0	0.0	7	40
						3 0		81 0						1 0				1 0				1 0				2 0		94	94	0	0.0	9	41
	1 0					1 0		41 1					1 0	2 0														51	50	1	2.0	9	42
			1 0					93 1																				101	100	1	1.0	4	43
								31 0																				33	33	0	0.0	3	44
								101 1						1 0										1 0				108	107	1	0.0	7	45
								37 0																				40	40	0	0.0	3	46
								14 3			21 1			2 0														46	41	5	10.9	7	47
			1 0					3 0	3 0		54 0			1 0									1 0					71	71	0	0.0	11	48
								3 0			39 0					1 0												46	46	0	0.0	6	49
								4 1	1 1		82 0			1 0									1 0			1 0		95	93	2	2.1	8	50
								4 0				31 0							2 0							1 1		44	43	1	2.3	7	51
								1 0					32 2										2 0					51	48	3	5.9	5	52
	1 0					7 0		4 1			3 0			31 0	1 0							2 0						53	52	1	1.9	9	53
		1 0				9 0		11 0	14 0		4 0			83 0	3 0			1 0		3 0			3 0		1 0	1 0		157	157	0	0.0	21	54
			1 0											14 2												1 0		18	16	2	11.1	3	55
1 0	6 0					6 0		10 0	14 0		1 0			60 0					3 0	4 0			1 0	7 0	1 0	1 0		137	137	0	0.0	21	56
								5 2			4 0			7 2														21	17	4	19.0	4	57
									1 0		8 0			30 1					1 0				1 0					43	42	1	2.3	6	58
								1 0	3 0							29 0												42	42	0	0.0	6	59
								2 1						1 0		1 0		51 0				1 0		1 0				73	72	1	1.4	12	60
3 0									2 0		3 3					3 1		20 0	2 1			1 0		6 0				64	54	10	15.6	18	61
1 0 4 0									2 0		1 0			0 1				39 0										60	58	2	3.3	10	62
1 0								1 0																				31	31	0	0.0	5	63
	1 0							2 0	1 0										26 0									63	63	0	0.0	5	64
			1 0					1 0						1 0					59 0													
	1 0							7 0							1 0						37 0							49	49	0	0.0	7	65
							1 0	5 0	11 0					2 0								36 0		15 0				75	75	0	0.0	9	66
3 0									5 0							1 0						31 0		1 0				53	53	0	0.0	11	67
	1 0																								49 1			52	51	1	1.9	3	68
																											19 0	19	19	0	0.0	1	69
																											30 9	39	30	9	23.1	1	70
								2 0			1 0			1 0														8	8	0	0.0	6	71
								10 1		1 0				1 0									2 0	1 0	1 0			22	21	1	5.0	8	72
								22 1		1 0	11 0			16 0						1 0			0 1	2 0				91	88	3	3.3	20	73
							1 0	1 0															1 0					15	15	0	0.0	7	74
								4 0			4 0		1 0										2 0	1 0	3 0		1 0	79	75	4	5.1	18	75
	1 0						4 0	21 2			4 0		1 0	4 0							7 0							9	3	6	66.7	3	76
																												1	0	1	100.0	1	77
										10 0		1 0											5 0	1 0				25	25	0	0.0	8	78
				1 1	1 0		6 1	65 44			9 5	2 0		10 4	1 2					4 0			2 0	2 2	5 4		1 1	241	149	92	38.2	25	79
							2 1						0 1	1 0													1 1	30	25	5	16.7	10	80
																												0	0	0	0.0	0	81
29	161	9	127		1	2	60	1 889	81	18	298	38	52	322	16	38	9	117	102	13	47	84	22	58	112	3	86	4958					82
29	154	9	124		1	2	57	1 820	80	18	289	38	45	309	14	37	9	117	101	13	47	84	22	55	106	3	74		4712				83
0	7	0	3		0	0	3	0 69	1	0	9	0	7	13	2	1	0	0	1	0	0	0	0	0	3	6	0	12			246			84
0.0	4.3	0.0	2.4		0.0	0.0	5.0	0.0 7.8	1.2	0.0	3.0	0.0	13.5	4.0	12.5	2.6	0.0	0.0	1.0	0.0	0.0	0.0	0.0	5.2	5.4	0.0	13.9				5.0		85
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1921–1925					Graduates of 1920 and Previous					Graduates of 1925				
		Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of
	ARKANSAS																				
1	University of Arkansas Medical Department	28	27	1	3.6	5	26	25	1	3.8	4	2	2	0	0.0	2	25	25	0	0.0	
	CALIFORNIA																				
2	College of Medical Evangelists	67	65	2	3.0	7	66	64	2	3.0	6	1	1	0	0.0	1	58	57	1	1.7	
3	Stanford University School of Medicine	27	27	0	0.0	2	27	27	0	0.0	2	0	0	0	0.0	0	26	26	0	0.0	
4	University of California Medical School	52	52	0	0.0	6	51	51	0	0.0	6	1	1	0	0.0	1	46	46	0	0.0	
	COLORADO																				
5	University of Colorado School of Medicine	35	35	0	0.0	7	32	32	0	0.0	6	3	3	0	0.0	3	29	29	0	0.0	
	CONNECTICUT																				
6	Yale University School of Medicine	25	25	0	0.0	8	24	24	0	0.0	8	21	21	0	0.0	1	7	7	0	0.0	
	DISTRICT OF COLUMBIA																				
7	Georgetown University School of Medicine	46	45	1	2.2	12	44	44	0	0.0	11	2	1	1	50.0	1	21	21	0	0.0	
8	George Washington University Medical School	58	58	0	0.0	10	51	51	0	0.0	9	7	7	0	0.0	3	39	39	0	0.0	
9	Howard University School of Medicine	85	75	10	11.8	19	82	74	8	9.8	19	3	1	2	66.7	2	60	56	4	6.7	
	GEORGIA																				
10	Emory University School of Medicine	136	133	3	2.2	7	122	121	1	0.8	7	14	12	2	14.3	1	92	92	0	0.0	
11	University of Georgia Medical Department	66	59	7	10.6	5	45	45	0	0.0	5	21	14	7	33.3	2	31	31	0	0.0	
	ILLINOIS																				
12	Chicago Medical School	23	16	7	30.4	1	23	16	7	30.4	1	0	0	0	0.0	0	1	1	0	0.0	
13	Loyola University School of Medicine	42	38	4	9.5	17	37	34	3	8.1	14	5	4	1	20.0	4	27	25	2	7.5	
14	Northwestern University Medical School	112	107	5	4.5	23	99	98	1	1.0	20	13	9	4	30.8	7	77	77	0	0.0	
15	Rush Medical College (University of Chicago)	146	143	3	2.1	22	130	129	1	0.8	20	16	14	2	12.9	4	89	89	0	0.0	
16	University of Illinois College of Medicine	82	76	6	7.3	19	67	66	1	1.5	17	15	10	5	33.3	8	56	55	1	1.8	
	INDIANA																				
17	Indiana University School of Medicine	91	91	0	0.0	7	88	88	0	0.0	6	3	3	0	0.0	2	79	79	0	0.0	
	IOWA																				
18	State University of Iowa College of Medicine	87	85	2	2.3	10	85	84	1	1.2	10	2	1	1	50.0	1	72	72	0	0.0	
	KANSAS																				
19	University of Kansas School of Medicine	40	39	1	2.5	6	38	37	1	2.6	5	2	2	0	0.0	2	32	31	1	3.1	
	KENTUCKY																				
20	University of Louisville School of Medicine	79	75	4	5.1	15	65	64	1	1.5	13	14	11	3	21.4	5	56	55	1	1.8	
	LOUISIANA																				
21	Tulane University of Louisiana School of Medicine	128	124	4	3.1	19	111	110	1	0.9	18	17	14	3	16.7	5	81	81	0	0.0	
	MARYLAND																				
22	Johns Hopkins University Medical Department	68	67	1	1.5	17	55	55	0	0.0	14	13	12	1	7.7	8	30	30	0	0.0	
23	Univ. of Md. School of Med. and Coll. of P. & S.	111	109	2	1.8	11	103	102	1	1.0	11	8	7	1	12.5	3	73	73	0	0.0	
	MASSACHUSETTS																				
24	Boston University School of Medicine	54	50	4	7.4	10	52	48	4	7.7	9	2	2	0	0.0	2	33	30	3	9.1	
25	College of Physicians and Surgeons	8	5	3	37.5	3	5	3	2	40.0	1	3	2	1	33.3	2	2	2	0	0.0	
26	Harvard University Medical School	80	80	0	0.0	22	72	72	0	0.0	21	8	8	0	0.0	4	23	23	0	0.0	
27	Tufts College Medical School	129	125	4	3.1	15	119	116	3	2.5	13	10	9	1	10.0	5	71	71	0	0.0	
28	Middlesex College of Medicine and Surgery	14	5	9	64.3	1	14	5	9	64.3	1	0	0	0	0.0	0	1	0	1	100.0	
	MICHIGAN																				
29	University of Michigan Medical School	187	183	4	2.1	13	181	178	3	1.7	12	6	5	1	16.7	4	152	152	0	0.0	
30	Detroit College of Medicine and Surgery	51	51	0	0.0	2	50	50	0	0.0	2	1	1	0	0.0	1	49	49	0	0.0	
	MINNESOTA																				
31	University of Minnesota Medical School	126	126	0	0.0	14	125	125	0	0.0	14	1	1	0	0.0	1	64	64	0	0.0	
	MISSOURI																				
32	Kansas City College of Medicine and Surgery	25	22	3	12.0	3	25	22	3	12.0	3	0	0	0	0.0	0	5	5	0	0.0	
33	Kansas City University of Physicians and Surgeons	6	5	1	16.7	1	5	4	1	20.0	1	1	1	0	0.0	1	4	4	0	0.0	
34	St. Louis College of Physicians and Surgeons	44	20	24	54.5	7	42	18	24	57.1	5	2	2	0	0.0	2	7	2	5	71.4	
35	St. Louis University School of Medicine	130	126	4	3.1	19	127	123	4	3.1	19	3	3	0	0.0	2	88	84	4	4.6	
36	Washington University School of Medicine	103	99	4	3.9	24	99	95	4	4.0	20	4	4	0	0.0	3	62	59	3	4.8	
	NEBRASKA																				
37	Creighton University College of Medicine	47	46	1	2.1	12	45	44	1	2.2	10	2	2	0	0.0	2	38	37	1	2.6	
38	University of Nebraska College of Medicine	106	105	1	0.9	11	106	105	1	0.9	11	0	0	0	0.0	0	92	92	0	0.0	
	NEW YORK																				
39	Albany Medical College	18	18	0	0.0	3	14	14	0	0.0	1	4	4	0	0.0	3	13	13	0	0.0	
40	University of Buffalo Medical Department	64	63	1	1.6	10	56	56	0	0.0	7	8	7	1	12.5	5	49	49	0	0.0	
41	Columbia University College of Phys. and Surgs.	104	104	0	0.0	14	94	94	0	0.0	9	10	10	0	0.0	7	76	76	0	0.0	
42	Cornell University Medical College	54	53	1	1.9	9	51	50	1	2.0	9	3	3	0	0.0	2	29	29	0	0.0	
43	Long Island College Hospital	105	103	2	1.9	5	101	100	1	1.0	4	4	3	1	25.0	3	91	91	0	0.0	
44	New York Homeo. Med. Coll. and Flower Hosp.	36	35	1	2.8	4	33	33	0	0.0	3	3	2	1	33.3	2	32	32	0	0.0	
45	University and Bellevue Hospital Medical College	110	109	1	0.9	8	108	107	1	0.0	7	2	2	0	0.0	1	99	98	1	1.0	
46	Syracuse University College of Medicine	40	40	0	0.0	3	40	40	0	0.0	3	0	0	0	0.0	0	35	35	0	0.0	
	OHIO																				
47	Eclectic Medical College	48	41	7	14.6	8	46	41	5	10.9	7	2	0	2	100.0	2	44	40	4	9.1	
48	University of Cincinnati College of Medicine	74	74	0	0.0	12	71	71	0	0.0	11	3	3	0	0.0	2	59	59	0	0.0	
49	Western Reserve University School of Medicine	48	48	0	0.0	7	46	46	0	0.0	6	2	2	0	0.0	2	40	40	0	0.0	
50	Ohio State University College of Medicine	97	95	2	2.1	8	95	93	2	2.1	8	2	2	0	0.0	1	83	83	0	0.0	
	OKLAHOMA																				
51	University of Oklahoma School of Medicine	44	43	1	2.3	7	44	43	1	2.3	7	0	0	0	0.0	0	30	30	0	0.0	
	OREGON																				
52	University of Oregon Medical School	51	48	3	5.9	5	51	48	3	5.9	5	0	0	0	0.0	0	35	33	2	5.7	
	PENNSYLVANIA																				
53	Hahnemann Medical College and Hosp. of Phila.	59	56	3	5.1	12	53	52	1	1.9	9	6	4	2	33.3	5	5	5	0	0.0	
54	Jefferson Medical College of Philadelphia	179	174	5	2.8	23	157	157	0	0.0	21	22	17	5	22.7	7	31	31	0	0.0	
55	Temple University School of Medicine	21	18	3	14.3	6	18	16	2	11.1	3	3	2	1	33.3	3	1	1	0	0.0	
56	University of Pennsylvania School of Medicine	158	156	2	1.3	23	137	137	0	0.0	21	21	19	2	9.5	6	25	25	0	0.0	
57	Woman's Medical College of Pennsylvania	24	18	6	25.0	7	21	17	4	19.0	4	3	1	2	66.7	3	2	1	1	50.0	
58	University of Pittsburgh School of Medicine	46	45	1	2.2	8	43	42	1	2.3	6	3	3	0	0.0	3	4	4	0	0.0	
	SOUTH CAROLINA																				
59	Medical College of the State of South Carolina	50	50	0	0.0	7	42	42	0	0.0	6	8	8	0	0.0	2	37	37	0	0.0	
	TENNESSEE																				
60	University of Tennessee College of Medicine	78	74	4	5.1	13	73	72	1	1.4	12	5	2	3	60.0	3	64	64	0	0.0	
61	Meharry Medical College	76	60	16	21.1	20	64	54	10	15.6	18	12	6	6	50.0	5	40	39	1	2.5	
62	Vanderbilt University School of Medicine	83	75	8	9.6	11	60	58	2	3.3	10	23	17	6	26.1	4	47	47	0	0.0	
	TEXAS																				
63	Baylor University College of Medicine	31	31	0	0.0	5	31	31	0	0.0	5	0	0	0	0.0	0	28	28	0	0.0	
64	University of Texas School of Medicine	64	64	0	0.0	6	63	63	0	0.0	5	1	1	0	0.0	1	60	60	0	0.0	

NAME OF COLLEGE	Graduates of All Years					Graduates of 1921-1925					Graduates of 1920 and Previous					Graduates of 1925					Marginal Number
	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	
VERMONT																					
University of Vermont College of Medicine	52	51	1	1.9	8	49	49	0	0.0	7	3	2	1	33.3	2	39	39	0	0.0	3	65
VIRGINIA																					
Medical College of Virginia	84	84	0	0.0	9	75	75	0	0.0	9	9	9	0	0.0	3	63	63	0	0.0	5	66
University of Virginia Department of Medicine	55	55	0	0.0	10	53	53	0	0.0	11	2	2	0	0.0	1	40	40	0	0.0	7	67
WISCONSIN																					
Marquette University School of Medicine	52	51	1	1.9	3	52	51	1	1.9	3	0	0	0	0.0	0	51	50	1	2.0	2	68
PHILIPPINE ISLANDS																					
University of the Philippines, Manila	19	19	0	0.0	1	19	19	0	0.0	1	0	0	0	0.0	0	19	19	0	0.0	1	69
University of St. Thomas, Manila	41	32	9	22.0	2	39	30	9	23.1	1	2	2	0	0.0	2	36	29	7	19.4	1	70
CANADA																					
Dalhousie University Faculty of Medicine	8	8	0	0.0	6	8	8	0	0.0	6	0	0	0	0.0	0	1	1	0	0.0	1	71
Queen's University Faculty of Medicine	37	32	5	13.5	11	22	21	1	5.0	8	15	11	4	26.7	6	0	0	0	0.0	0	72
University of Toronto Faculty of Medicine	118	111	7	5.9	22	91	88	3	3.3	20	27	23	4	14.8	8	3	3	0	0.0	2	73
University of Western Ontario Medical School	21	20	1	4.8	10	15	15	0	0.0	7	6	5	1	16.7	6	1	1	0	0.0	1	74
McGill University Faculty of Medicine	93	88	5	5.4	20	79	75	4	5.1	18	14	13	1	7.2	9	10	10	0	0.0	4	75
University of Montreal Medical Faculty	9	3	6	66.7	3	9	3	6	66.7	3	0	0	0	0.0	0	3	1	2	66.7	1	76
Laval University Faculty of Medicine	4	1	3	75.0	3	1	0	1	100.0	1	3	1	2	66.7	2	1	0	1	100.0	1	77
University of Manitoba Faculty of Medicine	29	29	0	0.0	9	25	25	0	0.0	8	4	4	0	0.0	4	11	11	0	0.0	5	78
Foreign Colleges	323	318	205	39.2	31	241	149	92	38.2	25	282	169	113	40.1	26	3	2	1	33.3	3	79
Miscellaneous Medical Colleges	243	159	84	34.7	32	30	25	5	16.7	10	213	134	79	32.4	29	0	0	0	0.0	0	80
Undergraduates and Osteopaths	62	29	33	53.2	9	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	81
Totals by States	5956	.....	.....	.....	.....	4958	.....	.....	.....	.....	936	.....	.....	.....	.....	3138	.....	.....	.....	.....	82
Totals — Examined — Passed	.....	5404	.....	.....	.....	.....	4712	.....	.....	.....	.....	663	.....	.....	.....	.....	3090	.....	.....	.....	83
Totals — Examined — Failed	.....	.....	552	.....	.....	.....	.....	246	.....	.....	.....	.....	273	.....	.....	.....	.....	48	.....	.....	84
Percentage of Failures	.....	.....	.....	9.3	.....	.....	.....	.....	5.0	.....	.....	.....	.....	29.2	.....	.....	.....	.....	1.5	.....	85

(CONTINUED FROM PAGE 1533)

or 83.2 per cent, were recent graduates, and of this number 5 per cent failed, as compared with 9.3 per cent for all candidates.

Old Practitioners Examined During 1925

Table C is arranged so as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1920 and previous years (third column), and for graduates of 1925 (fourth column). Of the graduates of 1920 and previous years—"old practitioners"—936 were examined, and of this number 273, or 29.2 per cent, failed, as compared with 5 per cent of failures for recent graduates. The numbers of these candidates will be diminished (see table 3) as state licensing boards extend their provisions for reciprocity, or the endorsement without further examination of a license granted by another state where a physician's qualifications are otherwise satisfactory. As a rule, states that have limited or no reciprocal relations with other states (Florida and New York—see table F) examine larger numbers of old practitioners.

Graduates of 1925 Examined During 1925

Table C also gives the results for the graduates of 1925 who were examined during the year by the state boards, and shows that 3,138, or 52.7 per cent, of all candidates examined during the year graduated in 1925, including thirty who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 3,974 students last year; therefore, 79 per cent of all graduates of 1925 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which accounts for some of the remaining 21 per cent. Of the 3,138 graduates of 1925 who were examined, forty-eight, or 1.5 per cent, failed.

Nonrecognition of Medical Colleges

Table D shows for each college, from official reports, the states in which its diplomas are not given full recognition. This table also shows the latest rating given to each college by the Council on Medical Education and Hospitals. For the student who is selecting a medical college, the facts in table D are of extreme importance. There are sixty-six, or 82.5 per cent, of all medical colleges which have complete recognition in all states. There are five others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining nine colleges, however, he will find on graduation that he cannot secure a license to practice in from seven to forty-eight states.

During the thirteen years that table D has been published, the proportion of fully recognized colleges has increased from 29 per cent in 1913 to 82.5 per cent in 1925.

Of the fifty states—counting in Alaska and the District of Columbia—the state licensing boards of forty-eight, to some extent at least, are now utilizing their legal power to refuse recognition to medical colleges that do not meet their educational requirements. In the other two states, the boards do not have the authority to enforce reasonable standards. In Arkansas and Connecticut, although the regular medical boards are debarring graduates of low-grade colleges, such candidates have been licensed by the separate eclectic boards.

Table 2.—*Recognition of Medical Colleges (Based on Table D)*

	Number of Colleges				
	1914	1917	1920	1924	1925
Recognized by all state boards	31	55	63	64	66
Not recognized in 1 to 9 states	33	17	10	7	5
Not recognized in 10 to 32 states	43	20	6	3	3
Not recognized in 33 to 37 states	..	6	..	..	..
Not recognized in 38 to 44 states	..	..	9	..	..
Not recognized in 45 to 48 states	..	..	..	6	6
Totals	107	98	88	80	80

It is evident that if the graduates of inferior medical colleges are not eligible for license in the majority of states, they will flock to the few that still grant such recognition. The following states, therefore—Arkansas (eclectic board), Massachusetts and the District of Columbia—will remain the dumping ground for the output of low-grade medical colleges until the licensing boards obtain and exercise the needed authority to bar them. Illinois will be the chief recipient of the graduates of the Chicago Medical School, which is recognized in that state.

Study of Totals and Percentages

A study of totals and percentages (table 3) as compared with previous years is of interest. The number, 5,956, examined in 1925 was 606 more than were examined in 1924, 1,258

(CONTINUED ON PAGE 1543)

TABLE D—RECOGNITION OF MEDICAL COLLEGES

This table, based on official reports, shows in what states diplomas granted by certain medical colleges are not recognized as an acceptable qualification for the license to practice medicine

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

	COLLEGE	Classification by Connell on Medical Education †	1 Alabama	2 Alaska	3 Arizona	4 Arkansas	5 California	6 Colorado	7 Connecticut	8 Delaware	9 District of Columbia	10 Florida	11 Georgia	12 Idaho	13 Illinois	14 Indiana	15 Iowa	16 Kansas	17 Kentucky	18 Louisiana	19 Maine	20 Maryland	21 Massachusetts	22 Michigan	23 Minnesota	24 Mississippi	25 Missouri	26 Montana	27 Nebraska	28 Nevada	29 New Hampshire	30 New Jersey	31 New Mexico	32 New York	33 North Carolina	34 North Dakota	35 Ohio	36 Oklahoma	37 Oregon	38 Pennsylvania	39 Rhode Island	40 South Carolina	41 South Dakota	42 Tennessee	43 Texas	44 Utah	45 Vermont	46 Virginia	47 Washington	48 West Virginia	49 Wisconsin	50 Wyoming	Reported Non-Recognition by State Licensing Boards: No. of State Boards reporting full recognition	No. of State Boards reporting college not recognized	Percentage of State Boards reporting full recognition	Marginal Number
1	Albany Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	1
2	Baylor University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	2
3	Boston University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	3
4	Chicago Medical School [1]	C	x	x	x	x	x	x	x	x	..	x	x	x	..	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	47	6	4
5	College of Medical Evangelists	A	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	47	3	94	5
6	College of Physicians and Surgeons, Boston	C	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	6
7	Columbia University College of Physicians and Surg.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	7
8	Cornell University Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	8
9	Creighton University College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	9
10	Dartmouth Medical School *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	10
11	Detroit College of Medicine and Surgery	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	11
12	Eclectic Medical College	B	x	..	..	..	..	..	..	x	..	..	..	x	..	..	x	..	..	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	..	..	x	..	..	..	x	x	x	..	..	..	..	x	..	..	x	37	13	74	12
13	Emory University Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	13
14	Georgetown University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	14
15	George Washington University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	15
16	Hahnemann Med. College and Hospital, Philadelphia	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	16
17	Harvard University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	17
18	Howard University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	18
19	Indiana University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	19
20	Jefferson Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	20
21	Johns Hopkins University Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	21
22	Kansas City College of Medicine and Surgery [2]	C	x	..	..	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	4	46	8	22
23	Kansas City University of Physicians and Surgeons [3]	C	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	23
24	Long Island College Hospital	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	24
25	Loyola University Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	25
26	Marquette University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	26
27	Medical College of the State of South Carolina	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	27
28	Medical College of Virginia	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	28
29	Meharry Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	2	96	29
30	Middlesex College of Medicine and Surgery	C	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	30
31	New York Homeo. Med. College and Flower Hospital	B	x	..	..	x	..	..	..	..	..	..	..	x	..	..	x	x	..	..	..	..	..	..	..	..	..	..	x	..	..	x	..	..	..	x	..	..	..	x	..	..	..	x	..	..	..	..	..	x	..	x	..	x	33	17	66	31
32	Northwestern University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	32
33	Ohio State University College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	33
34	Rush Medical College (University of Chicago)	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	34
35	St. Louis College of Physicians and Surgeons	C	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	..	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	35
36	St. Louis University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	36
37	Stanford University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	37
38	State University of Iowa College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	38
39	Syracuse University College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	39
40	Temple University School of Medicine	B	x	..	..	x	..	..	..	..	..	x	..	x	x	..	x	x	..	..	..	..	..	x	..	..	..	x	x	..	..	x	x	..	..	..	x	..	..	..	x	..	..	x	x	x	x	..	..	x	..	x	..	..	x	28	22	56	40
41	Tufts College Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	41
42	Tulane University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	42
43	University and Bellevue Hospital Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	43
44	University of Alabama School of Medicine *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	44
45	University of Arkansas Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49	1	98	45
46	University of Buffalo Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	46
47	University of California Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	47
48	University of Cincinnati Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	48
49	University of Colorado School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	49
50	University of Georgia Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	50
51	University of Illinois College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	51
52	University of Kansas School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	52
53	University of Louisville School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	53
54	Univ. of Md. School of Med. and Coll. of P. and S.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	54
55	University of Michigan Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	55

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TOTAL REGISTRATION IN FIVE YEARS

Table G permits the reader to note the registrations in each state for the last five years. In the totals registered there was a decrease during the first two years, but an increase during the last three.

In 1925, the total registered was 7,194, an increase of 641. Regardless of the general increases in the numbers registered in 1925, marked decreases are noted in Massachusetts, 113, in New Jersey, 50, and in Missouri, 26. The largest increases in registration were in Florida, 281; New York, 197; Texas, 141; Iowa, 38; Oregon, 36; Nebraska, 35, and Maryland, 28. During the last five years, New York registered 4,340, the highest number, followed by California with 3,125; Illinois with 1,951; Ohio with 1,665; Pennsylvania with 1,613, and Michigan with 1,386. The three lowest registrations are Delaware with 71, Wyoming with 79, and New Hampshire with 82.

TABLE E.—*Physicians Examined by State Boards 1921 to 1925, Inclusive*

STATES	1921		1922		1923		1924		1925		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	37	3	31	1	36	2	25	1	26	1	163	155	8	4.9
Arizona	6	10	7	2	6	2	6	0	5	0	44	30	14	31.8
Arkansas	46	6	30	1	50	4	32	1	48	0	218	206	12	5.5
California	184	56	208	67	185	68	250	80	298	38	1429	1120	309	21.7
Colorado	44	16	32	34	51	19	40	15	52	17	320	219	101	30.9
Connecticut	145	27	114	26	77	19	83	22	49	14	576	468	108	18.7
Delaware	8	0	17	0	5	0	8	1	4	1	44	42	2	4.5
Dist. of Columbia	42	11	54	7	57	6	68	13	105	2	365	326	39	10.6
Florida	50	24	56	21	72	28	147	39	437	100	974	762	212	21.7
Georgia	68	0	68	1	80	1	80	0	86	0	384	382	2	5.2
Idaho	14	0	11	0	9	0	5	0	9	0	48	48	0	0.0
Illinois	348	61	286	68	350	105	364	81	296	39	1998	1644	354	17.8
Indiana	65	0	35	1	67	0	78	0	96	0	342	341	1	0.3
Iowa	61	0	49	0	53	0	59	0	89	1	312	311	1	0.3
Kansas	46	1	28	5	31	0	47	0	65	0	223	217	6	2.7
Kentucky	54	5	37	4	38	3	54	0	58	2	255	241	14	5.5
Louisiana	74	7	55	4	66	0	73	1	72	2	354	340	14	4.0
Maine	35	2	28	0	28	0	50	0	40	3	195	190	5	2.6
Maryland	123	7	74	3	91	5	96	4	115	6	524	499	25	4.6
Massachusetts	225	98	244	56	219	62	260	68	146	68	1441	1094	347	24.1
Michigan	176	2	119	4	202	2	224	2	268	2	1001	989	12	1.2
Minnesota	120	1	107	3	83	0	115	0	135	0	564	560	4	0.7
Mississippi	15	2	27	2	22	4	20	1	28	0	121	112	9	7.4
Missouri	132	12	107	16	145	29	182	16	165	11	815	731	84	10.3
Montana	17	2	11	2	17	1	18	1	13	1	83	76	7	8.4
Nebraska	76	3	42	0	94	0	85	3	124	5	432	421	11	2.5
Nevada	3	1	13	1	7	2	7	0	2	0	36	32	4	11.1
New Hampshire	4	1	12	0	4	0	3	0	3	0	27	26	1	3.7
New Jersey	26	3	25	10	52	14	66	10	74	6	286	243	43	14.7
New Mexico	1	0	0	0	0	0	0	0	1	0	2	0	0	0.0
New York	806	128	599	80	675	153	788	177	933	136	4475	3801	674	15.1
North Carolina	51	4	37	8	65	5	89	1	80	1	341	322	19	5.6
North Dakota	6	5	6	2	11	1	3	0	18	3	55	44	11	20.0
Ohio	207	14	183	6	222	4	255	22	306	13	1232	1173	59	4.4
Oklahoma	38	1	20	2	27	3	15	0	38	0	144	138	6	4.2
Oregon	31	12	23	7	19	4	41	7	51	9	204	165	39	19.1
Pennsylvania	303	34	265	18	215	20	302	11	335	24	1527	1420	107	7.0
Rhode Island	27	1	27	0	26	1	20	3	25	2	132	125	7	5.3
South Carolina	28	2	24	1	40	0	34	2	38	1	170	164	6	3.5
South Dakota	19	1	19	0	21	0	21	1	14	0	96	94	2	2.1
Tennessee	102	0	65	1	100	0	116	0	119	0	503	502	1	0.2
Texas	77	1	77	0	75	0	98	1	110	5	444	437	7	1.4
Utah	17	1	11	3	10	1	8	0	13	0	64	59	5	7.8
Vermont	31	0	19	0	24	0	34	0	52	0	160	160	0	0.0
Virginia	61	4	55	0	71	2	76	1	87	0	357	350	7	2.0
Washington	20	7	6	6	11	0	30	1	27	2	110	94	16	14.5
West Virginia	37	11	42	9	47	4	61	4	57	9	281	244	37	13.1
Wisconsin	59	6	60	3	59	0	102	9	115	12	425	395	30	7.1
Wyoming	4	1	8	3	3	1	3	1	4	0	28	22	6	21.4
U. S. Territories and Possessions	42	7	28	4	80	125	63	37	78	16	480	291	189	39.5
Totals	4,807		3,993		4,698		5,350		5,956		24,804			
Registered	4,211		3,501		3,998		4,718		5,404		21,827			
Rejected	596		492		700		637		552		2,977			
Per cent rejected	12.4		12.3		14.9		11.9		9.3		12.0			

This table gives the number of physicians who passed and failed in the examinations in each state during the last five years. The last four columns give the total and the percentage rejected by each state in the five year period. Seven states registered over 1,000 candidates by examination in the five years—New York, Illinois, Pennsylvania, Massachusetts, California, Ohio and Michigan. Altogether 21,827 physicians were registered by examination in the five years, an average of 4,365 each year.

The five states having the highest percentages of failures in the five years were Arizona 31.8, Colorado 30.9, Massachusetts 24.1, Florida 21.7, and California 21.7. Colorado and Massachusetts admitted osteopaths to their examinations as physicians and surgeons and would be expected to have high percentages. On the other hand, in most states the boards refuse to recognize low-grade colleges (see table D) and thereby eliminate inferior candidates prior to the examination, and correspondingly the percentages of failures at examinations are lower. For example, Tennessee rejected only 0.2 per cent of those who took its examinations, but refused to admit graduates of six inferior medical colleges to its examinations. In Idaho, New Mexico and Vermont there were no failures. The next lowest failure percentages were in Indiana, 0.3; Iowa, 0.3, and Minnesota, 0.7.

TABLE F.—*Registration by State Boards During the Year 1925*

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1921-1925	Graduates, 1920 and Previous	Nongraduates and Graduates of Nondescript Colleges			
Alabama	25	1	..	21	..	47
Arizona	2	2	1	25	..	30
Arkansas	39	8	1	32	..	80
California	255	38	..	291	..	584
Colorado	43	5	4	56	..	108
Connecticut	48	1	..	67	..	116
Delaware	3	1	..	8	..	12
District of Columbia	96	9	..	14	..	119
Florida	177	260	..	1	..	438
Georgia	85	1	..	12	..	98
Idaho	5	4	..	6	..	15
Illinois	269	27	..	62	..	358
Indiana	96	..	..	65	..	161
Iowa	83	6	..	50	..	139
Kansas	59	6	..	28	..	93
Kentucky	54	3	1	36	..	94
Louisiana	69	3	..	9	..	81
Maine	36	4	..	11	..	51
Maryland	110	5	..	24	..	139
Massachusetts	121	12	13	7	..	153
Michigan	254	14	..	67	..	335
Minnesota	134	1	..	70	..	205
Mississippi	20	6	2	13	..	41
Missouri	154	11	..	..	..	165
Montana	9	4	..	11	..	24
Nebraska	124	..	..	10	..	134
Nevada	1	1	..	9	..	11
New Hampshire	2	1	..	17	..	20
New Jersey	57	17	..	..	..	74
New Mexico	1	..	..	20	..	21
New York	820	113	..	139	6	1,078
North Carolina	80	..	..	38	..	118
North Dakota	18	..	..	12	..	30
Ohio	289	17	..	77	..	383
Oklahoma	38	..	..	29	..	67
Oregon	45	6	..	42	..	93
Pennsylvania	309	26	..	32	..	367
Rhode Island	14	11	..	..	..	25
South Carolina	37	1	..	13	..	51
South Dakota	9	5	..	10	..	24
Tennessee	117	2	..	..	..	119
Texas	101	4	5	132	..	242
Utah	13	..	..	13	..	26
Vermont	47	5	..	7	..	59
Virginia	84	3	..	30	..	117
Washington	22	5	..	86	..	113
West Virginia	55	2	..	23	..	80
Wisconsin	106	7	2	50	..	165
Wyoming	3	1	..	8	..	12
U. S. Terr. and Poss.	74	4	..	1	..	79
Totals	4,712	663	29	1,784	6	7,194

This table shows the numbers registered in each state during 1925 by examination, by reciprocity, and by endorsement of credentials. The first three columns show those registered by examination, including recent graduates, older practitioners and nongraduates or graduates of nondescript colleges, including any osteopaths who were licensed as physicians and surgeons. The fourth column shows the number registered by the endorsement of licenses issued by other states (reciprocity) and by certificates of the Army, Navy, Public Health Service and the National Board of Medical Examiners. The fifth column shows those licensed under various exemption clauses in the practice acts—because of high professional standing or by the endorsement of diplomas of recognized medical schools. Massachusetts licensed 13 osteopaths as physicians and surgeons; Texas, 5; Colorado, 3 and Wisconsin, 2. The last column shows for each state the total number of physicians registered by all methods during 1925. Seven states registered over 300 each, these being New York, 1,078; California, 584; Florida, 438; Ohio, 383; Pennsylvania, 367; Illinois, 358 and Michigan, 335. The total registration by all methods was 7,194, an increase of 641 over 1924.

MEDICAL TRAINING OF APPLICANTS LICENSED IN 1925

Table H is of especial interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1925. Of the 7,194 candidates registered, 5,404 were licensed by

TABLE G.—*Registration by State Boards for Five Years*

State	1921	1922	1923	1924	1925	Total
Alabama	51	43	53	50	47	244
Arizona	6	37	27	26	30	126
Arkansas	97	66	79	51	80	373
California	581	630	692	638	584	3,125
Colorado	123	119	102	86	108	538
Connecticut	164	150	101	107	116	638
Delaware	14	22	12	11	12	71
District of Columbia	57	69	79	90	119	414
Florida	50	56	72	157	438	773
Georgia	86	84	95	100	98	463
Idaho	33	22	12	16	15	98
Illinois	399	335	427	432	358	1,951
Indiana	102	69	142	157	161	631
Iowa	126	70	70	101	139	506
Kansas	99	86	102	90	93	470
Kentucky	94	69	67	88	94	412
Louisiana	85	64	76	81	81	387
Maine	41	34	32	68	51	226
Maryland	160	93	122	111	139	625
Massachusetts	225	244	221	266	153	1,109
Michigan	248	202	282	319	335	1,386
Minnesota	215	200	147	180	205	947
Mississippi	34	43	45	33	41	196
Missouri	165	130	216	191	165	867
Montana	19	11	20	26	24	100
Nebraska	111	62	118	99	134	524
Nevada	6	24	20	23	11	84
New Hampshire	18	12	10	22	20	82
New Jersey	164	137	208	124	74	707
New Mexico	38	41	31	16	21	147
New York	879	748	754	881	1,078	4,340
North Carolina	101	66	111	128	118	524
North Dakota	14	14	16	14	30	88
Ohio	326	261	307	388	383	1,665
Oklahoma	108	78	76	48	67	377
Oregon	31	47	44	57	93	272
Pennsylvania	334	313	256	343	367	1,613
Rhode Island	27	27	26	20	25	125
South Carolina	40	30	45	41	51	207
South Dakota	24	22	28	31	24	129
Tennessee	102	65	114	116	119	516
Texas	195	178	201	98	242	914
Utah	29	27	24	18	26	124
Vermont	34	21	30	36	59	180
Virginia	82	80	98	104	117	481
Washington	158	59	74	116	113	520
West Virginia	74	82	106	84	80	426
Wisconsin	119	110	104	189	165	687
Wyoming	18	17	13	19	12	79
U. S. Possessions	42	28	214	63	79	426
Totals	6,348	5,497	6,321	6,553	7,194	31,913

This table shows the totals registered in each state during the last five years. Marked decreases are noteworthy in Illinois, 74; New Jersey, 50; Missouri, 26 and Wisconsin, 24. Marked increases over 1924, however, are noted in Florida, 281; New York, 197 and Texas, 144. During the three years following 1920 the totals registered decreased from 6,557 to 6,321. In the three years since 1923 the totals have again increased to 7,194—the largest number registered in any year since 1910.

TABLE H.—*Qualifications of Physicians Licensed in 1925*

Marginal Number	STATE	By Examination					By Reciprocity or Credentials					Totals Registered from Medical Colleges in Class				Grand Totals	Marginal Number
		Medical Colleges in Class				Totals	Medical Colleges in Class				Totals						
		A	B	C	Misc.		A	B	C	Misc.		A	B	C	Misc.		
1	Alabama	26	..	..	..	26	17	1	1	2	21	43	1	1	2	47	1
2	Arizona	3	..	2	..	5	15	2	1	7	25	18	2	3	7	30	2
3	Arkansas	22	2	20	4	48	20	6	1	5	32	42	8	21	9	80	3
4	California	257	4	2	30	293	176	29	10	76	291	433	33	12	106	584	4
5	Colorado	31	1	18	2	52	32	9	..	15	56	63	10	18	17	108	5
6	Connecticut	42	6	..	1	49	55	3	1	8	67	97	9	1	9	116	6
7	Delaware	3	..	..	1	4	5	2	..	1	8	8	2	..	2	12	7
8	District of Columbia	99	1	1	4	105	5	..	2	7	14	104	1	3	11	119	8
9	Florida	347	35	2	53	437	..	..	..	1	1	347	35	2	54	438	9
10	Georgia	85	..	..	1	86	11	..	1	..	12	96	..	1	1	98	10
11	Idaho	7	1	..	1	9	1	1	..	4	6	8	2	..	5	15	11
12	Illinois	224	22	19	31	296	41	10	4	7	62	265	32	23	38	358	12
13	Indiana	94	2	..	..	96	39	6	3	17	65	133	8	3	17	161	13
14	Iowa	84	..	..	5	89	39	3	3	5	50	123	3	3	10	139	14
15	Kansas	63	..	..	2	65	18	3	2	5	28	81	3	2	7	93	15
16	Kentucky	52	1	2	3	58	26	5	..	5	36	78	6	2	8	94	16
17	Louisiana	71	..	1	..	72	8	1	..	..	9	79	1	1	..	81	17
18	Maine	33	3	..	4	40	8	..	..	3	11	41	3	..	7	51	18
19	Maryland	107	1	1	6	115	13	3	1	7	24	120	4	2	13	139	19
20	Massachusetts	107	3	31	5	146	7	..	..	..	7	114	3	31	5	153	20
21	Michigan	252	6	..	10	268	49	5	1	12	67	301	11	1	22	335	21
22	Minnesota	134	..	..	1	135	60	4	..	6	70	194	4	..	7	205	22
23	Mississippi	25	1	2	..	28	7	4	..	2	13	32	5	2	2	41	23
24	Missouri	160	2	1	2	165	..	..	..	..	0	160	2	1	2	165	24
25	Montana	11	2	..	..	13	8	1	..	2	11	19	3	..	2	24	25
26	Nebraska	123	..	..	1	124	9	1	..	..	10	132	1	..	1	134	26
27	Nevada	1	..	..	1	2	7	..	1	1	9	8	..	1	2	11	27
28	New Hampshire	3	..	..	..	3	14	..	..	3	17	17	..	..	3	20	28
29	New Jersey	51	3	..	20	74	..	..	..	..	0	51	3	..	20	74	29
30	New Mexico	1	..	..	..	1	10	1	..	9	20	11	1	..	9	21	30
31	New York	724	68	1	140	933	112	6	..	27	145	836	74	1	167	1,078	31
32	North Carolina	80	..	..	..	80	30	3	..	5	38	110	3	..	5	118	32
33	North Dakota	17	1	..	..	18	11	..	..	1	12	28	1	..	1	30	33
34	Ohio	258	28	1	19	306	63	8	1	5	77	321	36	2	24	383	34
35	Oklahoma	36	..	..	2	38	20	3	1	5	29	56	3	1	7	67	35
36	Oregon	50	..	..	1	51	27	4	..	11	42	77	4	..	12	93	36
37	Pennsylvania	294	20	..	21	335	31	..	..	1	32	325	20	..	22	367	37
38	Rhode Island	20	..	..	5	25	..	..	..	..	0	20	..	..	5	25	38
39	South Carolina	38	..	..	..	38	7	3	1	2	13	45	3	1	2	51	39
40	South Dakota	11	1	..	2	14	9	..	..	1	10	20	1	..	3	24	40
41	Tennessee	116	..	2	1	119	..	..	..	..	0	116	..	2	1	119	41
42	Texas	98	..	5	7	110	65	16	18	33	132	163	16	23	40	242	42
43	Utah	13	..	..	..	13	10	1	..	2	13	23	1	..	2	26	43
44	Vermont	50	..	..	2	52	6	..	..	1	7	56	..	..	3	59	44
45	Virginia	86	..	1	..	87	25	1	1	3	30	111	1	2	3	117	45
46	Washington	22	2	..	3	27	64	8	3	11	86	86	10	3	14	113	46
47	West Virginia	52	2	..	3	57	19	1	..	3	23	71	3	..	6	80	47
48	Wisconsin	99	4	2	10	115	35	5	..	10	50	134	9	2	20	165	48
49	Wyoming	4	..	..	..	4	7	..	..	1	8	11	..	..	1	12	49
50	U. S. Territories and Possessions	24	1	..	53	78	1	..	..	..	1	25	1	..	53	79	50
	Totals	4,610	223	114	457	5,404	1,242	159	57	332	1,790	5,852	382	171	789	7,194	

In 1925, 23 candidates were licensed by the Arkansas Eclectic Board, including 20 graduates of a class C school and one nongraduate who is rated as of class C.

Of the 31 graduates of class C colleges licensed in Massachusetts, 13 were graduates of osteopathic colleges, which are rated as of class C. In Colorado, of the 18 class C applicants registered, 4 were graduates of osteopathic colleges, and one was a nongraduate.

In Connecticut, in 1925, no candidates were reported as licensed by the Eclectic Board and only one class C candidate (a nongraduate) was licensed in the state by reciprocity.

Illinois harbors the Chicago Medical School, a class C medical college, not now recognized in 47 other states. Massachusetts has two class C colleges, the College of Physicians and Surgeons and the Middlesex College of Medicine and Surgery, but does not have the authority to refuse recognition to low grade institutions. This accounts for the large number of class C graduates licensed in that state. Missouri has three class C colleges, the Kansas City College of Medicine and Surgery, the Kansas City University of Physicians and Surgeons and the St. Louis College of Physicians and Surgeons. The Missouri board refused recognition to these colleges until forced to do so by an amendment to the medical practice law in 1921—an amendment that was repealed in 1923. Missouri registered only one class C graduate in 1925, as compared with 38 in 1923.

Texas reports that class C medical schools are not recognized, but accepted 20 osteopaths who come from schools of equally low or lower type.

Eleven states accepted class C graduates through reciprocity, while they licensed none by examination. Indiana, Iowa and Washington so registered 3 each. One or two each were licensed by reciprocity in eight other states. Altogether, there were 18 class C graduates licensed by reciprocity in states which registered none by examination. On the whole, in 1925, 114 class C graduates were licensed by examination and 57 through reciprocity, a total of 171, 42 more than in 1924.

examination and 1,790 by reciprocity or on presentation of acceptable credentials. Those who graduated prior to 1907, when the first classification of medical colleges was completed by the Council on Medical Education, are included among graduates of "Miscellaneous Colleges." Among the graduates of class C schools are included twenty-three osteopaths who were licensed as physicians in Colorado, Massachusetts, Texas and Wisconsin.

As will be noted, the largest number of class C graduates was licensed in Massachusetts with 31, followed by Illinois and Texas with 23 each, Arkansas with 21, Colorado with 18, California with 12, and Florida, Indiana, Iowa and Washington with 3 each.

New York registered 74 class B graduates—the largest number—followed by Ohio with 36; Florida, 35; California, 33; Illinois, 32, and Pennsylvania, 20. In 1925, only class A graduates were registered by either examination or reciprocity in New Hampshire, Rhode Island, Vermont and Wyoming.

Of the 7,194 physicians registered by all methods in 1925, 5,852, or 81.3 per cent, graduated from class A medical colleges; 382, or 5.3 per cent, from class B colleges; 171, or 2.4 per cent, from class C colleges, and 789, or 11.1 per cent, graduated prior to 1907, when the first classification of medical colleges was prepared, or came from foreign medical colleges. By comparing these figures with the results for the previous seven years as shown in table 4, it is noteworthy that the *percentages* from class B and class C colleges are steadily decreasing, and the percentage of graduates of class A colleges increasing.

TABLE 4.—*Source of Physicians Licensed in Nine Years*

Year	From Medical Colleges in						Miscellaneous and Foreign		Total
	Class A		Class B		Class C				
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	
1917	3,369	62.1	988	18.2	297	4.3	769	14.4	5,423
1918	2,456	58.7	682	16.3	342	8.2	705	16.8	4,185
1919	4,368	66.4	872	13.2	278	4.2	1,066	16.2	6,584
1920	4,597	70.2	631	9.6	275	4.2	1,054	16.0	6,557
1921	4,445	70.0	585	9.2	394	6.2	924	14.6	6,348
1922	3,999	72.8	444	8.1	316	5.7	738	13.4	5,497
1923	4,755	75.2	380	6.0	299	4.8	887	14.1	6,321
1924	5,196	79.3	404	6.2	129	1.9	824	12.6	6,553
1925	5,852	81.3	382	5.3	171	2.4	789	11.0	7,194
Totals	39,037	71.4	5,368	9.8	2,501	4.6	7,756	14.2	54,662

TABLE I.—*Qualifications of Physicians Licensed by State Medical Boards in Six Years*

Mar. No.	State	Graduates of Class A Medical Schools							Graduates of Class B Medical Schools							Graduates of Class C Medical Schools							Grads. of Misc. Colleges 6 Yrs.	Total Registrations 6 Yrs.	Mar. No.
		1920	1921	1922	1923	1924	1925	Total	1920	1921	1922	1923	1924	1925	Total	1920	1921	1922	1923	1924	1925	Total			
1	Alabama	39	37	28	46	40	43	233	10	7	8	5	4	1	35	3	1	0	0	0	1	5	26	299	1
2	Arizona	21	4	16	15	17	18	91	3	0	2	1	5	2	13	0	0	1	1	0	3	5	57	166	2
3	Arkansas	36	47	24	24	27	42	200	16	9	15	8	9	8	65	26	21	18	36	1	21	123	82	470	3
4	California	265	235	349	459	461	433	2,202	69	85	74	56	46	33	363	61	47	63	17	8	12	208	933	3,706	4
5	Colorado	57	54	62	59	49	63	344	7	9	8	6	7	10	47	33	25	14	21	17	18	128	177	696	5
6	Connecticut	93	69	64	62	94	97	479	4	7	6	2	3	9	31	1	66	74	27	0	1	169	61	740	6
7	Delaware	3	10	16	9	6	8	52	3	1	2	2	2	2	12	1	2	3	0	0	0	6	12	82	7
8	Dist. Columbia	66	45	59	66	76	104	416	4	0	0	2	3	1	10	1	1	4	5	3	3	17	45	488	8
9	Florida	33	28	42	60	117	347	627	5	5	3	4	7	35	59	3	1	1	1	4	2	12	156	854	9
10	Georgia	76	72	75	87	92	96	498	25	6	3	4	3	0	41	1	2	0	2	2	1	8	42	589	10
11	Idaho	31	12	15	7	12	8	85	2	5	3	2	4	2	18	0	0	1	0	0	0	1	49	153	11
12	Illinois	370	320	288	341	309	265	1,893	54	21	23	27	31	32	188	33	45	10	25	18	23	154	185	2,420	12
13	Indiana	103	81	53	111	116	133	597	27	10	4	10	20	8	79	2	0	0	1	1	3	7	92	775	13
14	Iowa	103	97	64	64	84	123	535	15	15	2	1	6	3	42	2	6	0	0	3	3	14	55	646	14
15	Kansas	62	71	56	55	71	81	396	10	7	10	11	8	3	49	2	4	4	21	2	2	35	84	564	15
16	Kentucky	35	63	41	54	71	78	342	8	10	11	6	8	6	49	3	5	4	3	2	2	19	51	461	16
17	Louisiana	82	74	54	68	78	79	435	6	3	3	3	3	1	19	0	1	2	0	0	1	4	25	483	17
18	Maine	23	32	29	29	55	41	209	0	2	0	2	3	3	10	0	0	1	0	0	0	1	42	262	18
19	Maryland	130	140	81	109	92	120	672	3	10	2	5	4	4	28	3	4	1	0	2	2	12	80	792	19
20	Massachusetts	184	153	178	138	190	114	957	9	4	2	3	5	3	26	19	42	51	59	46	31	248	96	1,327	20
21	Michigan	215	195	161	238	283	301	1,393	24	26	7	10	13	11	91	1	2	2	1	1	1	8	170	1,662	21
22	Minnesota	146	190	178	138	157	194	1,003	14	7	6	2	3	4	36	1	0	0	0	0	0	1	81	1,121	22
23	Mississippi	34	27	25	35	28	32	181	4	4	8	4	3	5	28	1	0	3	0	0	2	6	25	240	23
24	Missouri	127	136	109	148	182	160	862	32	14	4	16	0	2	68	5	5	7	38	1	1	57	66	1,053	24
25	Montana	18	14	10	15	22	19	98	2	0	0	3	1	3	9	1	0	0	0	0	0	1	25	133	25
26	Nebraska	44	82	52	108	92	132	510	17	12	5	3	0	1	38	2	5	0	0	0	0	7	52	607	26
27	Nevada	10	1	5	5	8	8	37	2	0	3	3	1	0	9	6	0	5	6	4	1	22	51	119	27
28	New Hampshire	17	10	8	9	16	17	77	0	1	1	0	2	0	4	0	1	1	0	0	0	2	22	105	28
29	New Jersey	111	113	99	152	81	51	607	11	15	5	9	7	3	50	7	1	5	1	1	0	15	201	873	29
30	New Mexico	14	20	15	14	7	11	81	7	3	5	3	3	1	22	0	0	0	1	0	0	1	95	199	30
31	New York	675	758	630	648	706	836	4,250	55	73	53	39	62	74	356	0	1	5	1	0	1	8	467	5,081	31
32	North Carolina	91	76	52	86	109	110	524	12	5	4	13	5	3	42	2	1	0	2	1	0	6	70	642	32
33	North Dakota	23	10	10	13	8	28	92	3	0	0	3	2	1	9	0	0	0	0	0	0	0	22	123	33
34	Ohio	228	189	188	250	302	321	1,478	44	84	46	25	33	36	268	0	3	1	0	1	2	7	212	1,965	34
35	Oklahoma	35	50	32	47	33	56	253	13	10	15	11	5	3	57	5	26	6	4	2	1	44	112	466	35
36	Oregon	41	19	28	36	44	77	245	6	1	1	5	6	4	23	3	2	1	1	1	0	8	72	348	36
37	Pennsylvania	289	289	261	229	304	325	1,697	16	16	22	17	29	20	120	1	14	5	0	0	0	20	90	1,927	37
38	Rhode Island	20	15	22	25	17	20	119	1	1	0	0	0	0	2	1	1	0	0	0	0	2	27	150	38
39	South Carolina	36	31	24	39	39	45	214	1	2	2	4	2	3	14	1	3	0	1	0	1	6	14	248	39
40	South Dakota	33	17	15	23	23	20	131	3	2	2	0	0	1	8	2	1	0	0	2	0	5	31	175	40
41	Tennessee	54	69	35	110	113	116	497	24	30	26	1	2	0	83	2	0	2	0	1	2	7	61	648	41
42	Texas	150	116	108	136	94	163	776	16	18	22	19	0	16	91	28	34	8	18	2	23	113	204	1,184	42
43	Utah	24	21	24	23	17	23	132	0	1	1	0	0	1	3	2	4	0	0	0	0	6	20	161	43
44	Vermont	20	29	21	26	34	56	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	197	44
45	Virginia	70	75	70	86	99	111	511	7	2	4	2	2	1	18	1	2	2	2	1	2	10	33	572	45
46	Washington	60	73	38	45	65	86	367	8	19	7	11	13	10	68	3	2	0	0	1	3	9	199	643	46
47	West Virginia	71	48	66	91	71	71	418	10	8	5	4	1	3	31	3	1	4	0	0	0	8	66	523	47
48	Wisconsin	78	87	88	87	140	134	614	13	12	5	9	28	9	76	1	9	1	3	0	2	16	100	806	48
49	Wyoming	17	10	5	8	14	11	65	6	1	3	3	0	0	13	1	1	5	0	1	0	8	31	117	49
50	U. S. Territories and Possessions	25	31	23	22	34	25	160	0	2	1	1	0	1	5	1	2	0	0	0	0	3	103	271	50
	Totals	4,597	4,445	3,996	4,755	5,196	5,852	28,841	631	585	444	380	404	382	2,826	275	394	315	298	129	170	1,582	5,083	38,332	

Of the 125 graduates of low grade colleges licensed in Arkansas during the last six years, 123 were licensed by the Eclectic Board of Medical Examiners and 2 by the Regular Board.

During the six years, 208 graduates of inferior colleges were licensed in California, including 98 osteopaths who were licensed as physicians. None have been examined since 1922, however, when a separate osteopathic board was created.

Of the 128 class C graduates licensed in Colorado, 73 were osteopaths who are given the same privileges as physicians.

During the three years 1921 to 1923, inclusive, the Connecticut Eclectic Board certified for licensure 167 graduates of class C colleges, including graduates of regular, homeopathic and nondescript colleges as well as eclectic. None were licensed, however, in the last two years, although in 1925, one candidate was passed by the Eclectic Board but was refused a license by the commissioner of health.

Illinois, Massachusetts and Missouri are the homes of class C medical colleges, which accounts for the larger numbers of class C graduates licensed in those states.

Note that, in Missouri, 38 class C graduates were licensed in 1923, as a result of the change in the practice law removing the word "reputable" as referring to medical colleges. The amendment, however, was repealed in 1923, so that only one class C candidate, an old practitioner, was registered in 1925.

Of the 113 graduates of low grade institutions licensed in Texas during the six years, only 16 were by examination, while 97 were by reciprocity. Of those licensed, 67 were osteopaths who are given the same privileges as physicians.

TABLE J.—*Physicians Registered Through Reciprocity by State Examining Boards During 1924*

Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Reciprocity by State	Total Regis. Rec'p. Ex.	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U.S.A.,U.S.N.,etc	Nat. Bd. Med. Ex.	U.S. Territories	Foreign
Alabama	21	..	..	1	1	..	..	..	1	..	9	..	1	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Arizona	25	..	..	..	2	1	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	1	..	1	..	..	1	..	..	1	..	..	..	1	..	1	..	..	..	4	2	..	1	..	..	..	1	..	..	..	..	5
Arkansas	32	1	..	..	1	..	..	..	..	..	..	..	2	..	..	1	1	4	..	1	..	..	6	..	..	..	..	..	..	..	..	..	..	..	1	7	..	..	..	..	..	6	..	..	1	..	..	..	..	..	..	..	..	..
California	291	2	1	4	..	4	1	..	3	..	3	8	30	6	15	10	3	5	3	7	3	12	11	..	8	9	18	3	..	..	..	24	1	2	13	4	11	9	1	..	4	5	8	4	3	1	6	4	3	3	19	..	6	..
Colorado	56	1	..	1	1	..	1	..	1	..	2	..	10	2	3	1	1	1	..	3	1	..	1	..	3	..	5	..	..	1	..	2	..	..	1	2	..	2	..	..	..	2	1	1	..	1	..	..	1	..	..	4	..	..
Connecticut	67	..	1	..	..	..	..	..	..	..	2	..	3	1	..	..	..	..	2	7	13	4	..	..	1	..	..	..	1	..	..	15	..	..	..	..	..	3	3	..	..	..	..	..	1	1	..	1	..	..	8	..	..
Delaware	8	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	2	..	..	..	..	..
Dist. of Col.	14	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	1	..	..	..	..	1	3	..	1	1	..	..	..	..	..	1	..	..	..	2	..	1	..	..	..	..	..
Florida	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Georgia	12	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2	..	5	..	..	..	..	..	..	..	..	..	..	..	..
Idaho	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..
Illinois	62	2	..	4	..	1	..	..	..	..	..	..	..	8	4	1	3	..	1	2	..	2	4	1	..	1	2	..	..	..	..	..	..	..	2	2	..	5	..	..	..	3	4	..	..	..	1	5	..	4	..	..
Indiana	65	1	..	..	..	..	..	..	1	..	..	..	18	8	2	..	6	2	..	..	..	1	..	..	3	..	1	..	1	..	..	5	..	..	8	..	..	2	..	..	1	2	..	..	..	1	..	..	1	1	..	..	..
Iowa	50	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..	1	1	..	..	..	2	4	..	9	..	16	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	..	..	1	1	..	..	..	2	..	..
Kansas	28	1	..	3	..	1	..	..	..	..	..	..	4	..	1	..	..	..	..	..	..	..	..	..	..	1	8	..	..	..	..	..	..	..	1	3	..	1	..	..	1	..	1	..	..	1	1	..	..	..	..	..	..
Kentucky	36	3	..	1	..	..	..	..	..	..	..	..	3	2	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	5	1	..	2	..	..	..	5	2	..	..	1	5	..	..	..	2	..	1
Louisiana	9	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..	..	..	..	..	..	..	..	..	..
Maine	11	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	1	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	3	..	..	..	..	..	..	..
Maryland	24	..	..	..	1	..	..	..	5	..	..	..	1	1	1	..	..	1	..	..	..	1	..	1	..	..	1	..	..	..	..	..	..	..	1	..	..	1	..	3	..	..	..	..	..	2	..	2	..	..	2	..
Massachu'ts.	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	..
Michigan	67	..	..	..	2	1	..	..	1	..	..	..	13	..	6	1	1	..	1	4	4	..	2	..	8	..	..	..	..	..	..	3	..	..	9	1	..	1	..	1	..	2	2	..	..	2	1	1	..	..	..	..
Minnesota	70	..	..	..	2	..	1	..	..	..	1	..	11	..	7	..	..	..	..	1	..	5	..	..	..	..	3	..	..	1	..	..	3	5	1	..	..	6	..	..	1	1	..	..	..	3	..	..	10	..	..	..
Mississippi	13	1	..	2	..	..	..	..	..	..	1	..	1	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	1	..	..	..	..	..	..	..
Missouri	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Montana	11	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	1	..	..	3	1	..	..	..	..	..
Nebraska	10	..	..	..	..	..	..	..	..	..	..	..	4	..	2	2	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nevada	9	..	..	..	3	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..
N. Hampsh'e	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	6	1	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..
New Jersey	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Mexico	20	..	1	1	..	2	..	..	..	..	..	..	2	..	1	..	1	1	..	..	..	1	1	1	1	..	1	..	..	..	..	..	..	..	1	2	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..
New York	139	1	..	..	2	..	3	..	4	..	1	..	4	3	3	..	..	2	3	6	11	6	..	..	1	1	1	..	..	11	..	..	1	..	14	..	2	13	..	..	1	4	..	1	10	1	..	4	..	13	8	4
N. Carolina	38	..	..	1	..	..	..	..	1	..	4	..	1	2	..	..	1	1	..	1	1	2	..	..	..	..	..	..	..	..	..	3	..	..	1	..	..	2	..	8	..	1	..	..	4	..	1	..	..	1	2	..
N. Dakota	12	..	..	..	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	6	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..
Ohio	77	..	..	..	2	2	..	..	..	..	..	..	9	4	3	2	6	2	..	2	..	9	4	1	..	..	4	..	..	2	..	5	..	..	..	1	..	10	..	..	..	3	3	..	..	..	2	1	..	..	..	..
Oklahoma	29	..	..	3	..	..	..	..	..	1	..	..	..	..	..	5	..	2	..	..	..	..	..	3	4	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	2	7	..	..	..	..	..	..	..	..	..	..
Oregon	42	..	..	..	3	..	..	..	..	..	..	7	4	1	4	..	..	..	..	..	..	..	1	1	2	..	4	..	..	..	..	..	2	..	1	1	..	..	1	..	1	..	..	..	..	..	9	..	..	..	..	..
Penns'vania	32	..	..	..	..	..	..	..	1	..	..	..	..	2	..	..	..	..	1	..	1	1	..	..	1	..	..	..	..	1	..	..	1	1	..	1	..	..	..	1	..	..	..	..	..	1	..	1	..	1	17	..
Rhode Isl.	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
S. Carolina	13	1	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
S. Dakota	10	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..
Tennessee	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Texas	132	3	1	10	2	..	..	..	..	..	2	..	9	2	3	4	6	21	..	1	..	3	1	1	18	..	1	..	..	..	2	1	..	..	1	12	..	1	..	..	1	19	..	..	..	2	3	..	1	1	..	..
Utah	13	..	..	..	..	..	..	..	1	..	..	..	1	..	..	2	..	..	..	1	..	..	..	..	..	..	2	..	..	..	..	..	1	..	3	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..
Vermont	7	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	..	..	2	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Virginia	30	..	..	..	1	..	..	..	5	..	2	..	1	..	..	..	1	..	..	4	..	..	1	..	..	..	..	..	..	1	..	1	2	..	2	..	..	1	..	..	..	2	..	..	..	..	2	..	..	5	..	..
Washington	86	..	..	..	4	2	..	..	..	1	4	14	..	8	3	1	..	..	..	..	1	8	1	3	7	6	..	..	..	..	..	..	..	1	2	1	11	1	..	..	2	1	1	..	..	..	..	2	..	1	..	..
W. Virginia	23	..	..	..	1	..	..	1	..	..	1	..	..	..	..	..	1	..	..	2	..	..	..	1	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	3	1	..	..	8	..	..	..	..	..	1
Wisconsin	50	..	..	..	1	3	..	..	..	..	1	..	17	2	5	..	..	1	..	2	..	3	4	..	..	..	1	..	..	..	..	1	..	..	1	..	..	1	..	..	1	..	3	2	1	..	1	..	..	..	..	..	..
Wyoming	8	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..
U. S. Terr. and Poss.	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Totals	1784	18	4	31	31	17	6	1	25	2	34	15	181	46	73	33	34	48	19	49	43	57	58	19	66	20	80	3	4	20	2	72	14	10	72	38	24	70	5	16	11	84	42	11	14	39	29	31	31	7	33	67	14	11
Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

This table shows the number of physicians registered in each state through endorsement of other state licenses during 1925. Read from left to right, it shows the total number of physicians registered in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named at the left in the corresponding lines, and at the bottom is given the total number of candidates leaving the state to go elsewhere. This bottom line shows also the states in which physicians who registered through reciprocity obtained their original licenses. The total number licensed by reciprocity was 1,784, or 3 less than in 1924.

TRAINING OF PHYSICIANS REGISTERED IN SIX YEARS

Table I is of especial interest and shows the character of the training of physicians registered during the last six years. It is noteworthy that of the 38,332 physicians registered in six years, 28,841, or 75.2 per cent, were graduates of class A medical schools; 2,826, or 7.4 per cent, were graduates of class B schools, and 1,582, or 4.1 per cent, were graduates of class C schools. Graduates of foreign medical schools and those who graduated prior to 1907 from medical schools which, since that year, have not always been rated in class A, have been grouped under "Miscellaneous Graduates"; and, during the six years, 5,083 of these graduates were registered.

The largest number of candidates registered who graduated from class C colleges was 248 in Massachusetts, the next highest being 208 in California, 169 in Connecticut,[3] 154 in Illinois, 128 in Colorado, 123 in Arkansas, and 113 in Texas.

Note the number of class C graduates licensed in each of several states during the six years. In Arkansas, the number licensed ranges from eighteen to thirty-six each year. The number drops abruptly to one in 1924 (an undergraduate). This slump was undoubtedly due to the forced inactivity of the Kansas City College of Medicine and Surgery. In spite of its exposure as a diploma mill in 1923, this institution continues to issue degrees. Although Arkansas licensed twenty-one class C graduates in 1925, including seventeen from the Kansas City College of Medicine and Surgery, only four of these obtained their degrees in 1925.

In Connecticut, only a few such candidates were licensed each year until in 1921, 1922 and 1923 the numbers bounded up to 66, 74 and 27, respectively. The eclectic board had ceased to limit its acceptance of graduates of eclectic colleges, but had accepted all who applied, including graduates of homeopathic and regular schools. Note, however, that in 1924 and 1925 no class C graduates were licensed—a result of the diploma mill inquiry. In Illinois the numbers are larger or smaller as the board in that state fluctuates in its recognition of the Chicago Medical School, a typical class C institution. In Massachusetts there are two class C colleges—the board not having the authority to decide whether or not a medical school is "reputable." In Missouri, which harbors three of the class C schools, the board persistently refused recognition to those schools until late in 1922 the practice law was amended, forcing the board to examine class C graduates—hence the larger number in 1923. In

3. In Connecticut, legal proceedings are being conducted to revoke many of these licenses.

1925, after the board's power was restored and the low-grade medical schools were again refused recognition, only one such candidate was registered.

REGISTRATION BY RECIPROCITY

Table J shows the numbers of physicians registered in 1925 without examination on presentation of satisfactory credentials, which included a license issued by some other state board or by the National Board of Medical Examiners. Some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina, unlicensed (fourth and fifth column), 260 have each failed in from one to twelve separate examinations for licensure, making a total of 574 failures. It is an interesting fact, although not shown in the table, that approximately half of the individuals who failed are graduates of class C medical schools.

IMPROVED STANDARDS OF LICENSURE

Table M shows the states that have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine, and also the states that require a year's internship in a hospital. The first, third and fifth columns show, respectively, when the requirements affected students matriculating in medical colleges, and the second, fourth and sixth columns give the years in and after which all applicants for licenses are affected by the requirement. This table shows the rapidity with which higher requirements of preliminary education were adopted by state boards since 1908. Prior to that year, no state was requiring as a standard of preliminary education more than a high school education. There are now

TABLE K.—*Reciprocal Registration in Five Years (Showing What States Issued Original Licenses)*

State	Physicians Going from States Named During					Total
	1921	1922	1923	1924	1925	
Alabama	31	19	25	17	18	110
Arizona	8	12	9	2	4	35
Arkansas	33	43	50	15	31	172
California	23	28	30	16	31	128
Colorado	18	15	21	16	17	87
Connecticut	10	11	12	2	6	41
Delaware	10	12	5	1	1	29
District of Columbia	20	27	25	17	25	114
Florida	4	1	4	8	2	19
Georgia	40	34	58	55	34	221
Idaho	14	10	20	18	15	77
Illinois	304	246	276	248	181	1,255
Indiana	50	44	49	42	46	231
Iowa	81	65	82	73	73	374
Kansas	54	41	52	30	33	210
Kentucky	56	40	51	46	34	227
Louisiana	40	33	50	27	48	198
Maine	26	14	14	11	19	84
Maryland	63	64	60	55	49	291
Massachusetts	31	38	37	31	43	180
Michigan	70	70	50	64	57	311
Minnesota	47	40	57	59	58	261
Mississippi	24	24	27	26	19	120
Missouri	158	126	120	63	66	533
Montana	41	23	29	28	20	141
Nebraska	48	57	75	80	80	340
Nevada	5	5	5	8	3	26
New Hampshire	10	7	5	5	4	31
New Jersey	15	25	9	16	20	85
New Mexico	3	3	6	4	2	18
New York	135	127	144	92	72	570
North Carolina	21	8	14	10	14	67
North Dakota	15	18	17	18	10	78
Ohio	58	70	62	73	72	335
Oklahoma	27	27	44	30	38	166
Oregon	6	26	20	18	24	94
Pennsylvania	92	90	118	82	70	452
Rhode Island	3	6	4	1	5	19
South Carolina	10	24	21	17	16	88
South Dakota	11	9	12	16	11	59
Tennessee	91	75	68	70	84	388
Texas	43	34	54	35	42	208
Utah	21	17	12	16	11	77
Vermont	11	13	24	16	14	78
Virginia	52	46	43	44	39	224
Washington	27	37	34	19	29	146
West Virginia	18	24	18	24	31	115
Wisconsin	30	27	31	27	31	146
Wyoming	8	4	10	3	7	32
Army, Navy, P. H. Service	61	52	45	34	33	225
National Board of Medical Examiners	23	15	22	49	67	176
U. S. Territories and Possessions	2	8	3	5	14	32
Foreign and Misc.	7	10	11	5	11	44
Totals	2109	1944	2144	1787	1784	9768

This table shows that 9,768 physicians were registered through reciprocity during the last five years, an average of 1,954 each year. After 1920 there was a reduction each year, including 1922. In 1923 there was an increase of 314, but in 1925 a reduction of 674. Of the 9,768 candidates registered during the five years, 1,255 obtained their original licenses in Illinois, the next largest number being 570 in New York.

as examples—accept a physician's credentials if satisfactory, whether or not the state board issuing the original license returns the favor. Altogether, 1,784 physicians were licensed in 1925 on the basis of "reciprocity"—without being compelled to undergo a second trying examination.

Table K shows what state boards granted the original licenses of those registered elsewhere under the reciprocity provision during the last five years. Of the 9,768 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 1,255 who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois, only 570 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-eight states, while New York has relations with only eight.

UNLICENSED GRADUATES

Table L shows the number of physicians in each graduating class since 1910 who, evidently, have not yet received licenses from some state licensing board. Besides the total number of graduates each year, the table shows for 1925 the numbers remaining unlicensed in each class since 1910. The number of graduates of 1925 who are unlicensed are mostly interns, while those in previous classes include teachers, laboratory workers, including bacteriologists and pathologists, and others indirectly connected with the medical profession, but not engaged in diagnostic work. Some of these unlicensed physicians reside abroad and may have received the right to practice, but have never secured licenses in the United States. The fact that many internships extend over eighteen months or two years doubtless accounts for the large number of graduates of 1924 who are still unlicensed. The number of unlicensed graduates of Canadian schools is also shown.

Of the 2,777 graduates in the United States who are still

TABLE L.—*Number of Medical Graduates in Each of the Years Given Who Have Not Yet Obtained Licenses to Practice*

Class of	United States Medical Schools				Canadian Medical Schools	
	Total Graduates	Still Unlicensed in 1925	Failed at Exam.		Total Graduates	Still Unlicensed in 1925*
			Persons Failed	Times Failed		
1910	4,440	74	5	8	308	11
1911	4,273	82	7	15	342	14
1912	4,483	69	8	14	263	15
1913	3,981	65	10	13	305	14
1914	3,594	85	5	46	321	19
1915	3,536	69	14	37	318	19
1916	3,518	100	11	44	296	21
1917	3,379	127	10	21	315	15
1918	2,670	99	18	48	270	17
1919	2,656	108	10	24	296	15
1920	3,047	100	21	49	251	17
1921	3,192	91	20	32	406	18
1922	2,529	161	40	72	434	57
1923	3,120	161	34	87	492	54
1924	3,562	375	24	36	645	155
1925	3,974	1,011	23	28	473	171
Totals	55,954	2,777	260	574	5,645	632

* No information regarding failures of graduates before Canadian Boards.

forty-three states that have adopted the higher standard and, of these, thirty-nine require two years of college work. It is understood that in every instance the college work must have included courses in physics, chemistry and biology. Although the term "two years of college work" is mentioned, it is the content of those years that is asked for. That specification is used in the absence of a more fitting term describing the desired qualifications. As shown in table M (and the footnotes), in the District of Columbia, Massachusetts and Wyoming no standards of preliminary education have been legally authorized or adopted.

There are twelve states in which an internship in a general hospital is required as an essential qualification for the license to practice medicine. There are now more than enough hospitals seeking interns to provide places for all graduates each year, so that other state boards would be justified in requiring all applicants to possess this additional qualification.

TABLE M.—*State Requirements of Preliminary Education*

There are now forty-two states (counting Alaska Ter.) which have adopted requirements of preliminary education in addition to a standard four-year high school education. Of this number thirty-nine now require the two year standard. Twelve states have adopted also the requirement of a hospital internship as an essential for the license. These states, and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work		A Hospital Internship	
	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Graduates	Affects Students Matriculating	Affects All Applicants
Alabama	.....	....	1915-16	1919	.....	....
Alaska	1914-15	1918	1918-19	1922	1912-13	1917
Arizona	1914-15	1918	1918-19	1922	.....	....
Arkansas [1]	1915-16	1919	1918-19	1922	.....	....
California	1915-16	1919	.....	....	.....	....
Colorado	1908-09	1912	1910-11	1914	.....	....
Connecticut [1]	1911-12	1915	.....	....	.....	....
Delaware*	.....	....	.....	....	1919-20	1924
Dist. of Columbia†	.....	....	.....	....	.....	....
Florida	1914-15	1918	1918-19	1922	.....	....
Georgia	.....	....	1918-19	1922	.....	....
Idaho	.....	....	1915-16	1919	.....	....
Illinois	1915-16	1919	1918-19	1922	1918-19	1923
Indiana	1910-11	1914	1911-12	1915	.....	....
Iowa	.....	....	1911-12	1915	1918-19	1923
Kansas	1910-11	1914	1918-19	1922	.....	....
Kentucky	1914-15	1918	1918-19	1922	.....	....
Louisiana	1915-16	1919	1918-19	1922	.....	....
Maine	1915-16	1919	1916-17	1920	.....	....
Maryland	1914-15	1918	1918-19	1922	.....	....
Massachusetts†	.....	....	.....	....	.....	....
Michigan	1914-15	1918	1918-19	1922	1917-18	1922
Minnesota	.....	....	1908-09	1912	.....	....
Mississippi	1915-16	1919	1919-20	1923	.....	....
Missouri*	.....	....	.....	....	.....	....
Montana	1914-15	1918	1918-19	1922	.....	....
Nebraska*	.....	....	.....	....	.....	....
Nevada*	.....	....	.....	....	.....	....
New Hampshire	1914-15	1918	1915-16	1919	.....	....
New Jersey	1915-16	1919	1917-18	1921	1911-12	1916
New Mexico	1914-15	1918	1918-19	1922	.....	....
New York	1917-18	1921	1918-19	1922	.....	....
North Carolina	1914-15	1918	1918-19	1922	.....	....
North Dakota	.....	....	1908-09	1912	1913-14	1918
Ohio	.....	....	.....	....	.....	....
Oklahoma	1914-15	1918	1917-18	1921	.....	....
Oregon	.....	....	1920-21	1924	.....	....
Pennsylvania	1914-15	1918	.....	....	1909-10	1914
Rhode Island	1914-15	1918	1918-19	1922	1912-13	1917
South Carolina	.....	....	1918-19	1922	.....	....
South Dakota	1908-09	1912	1911-12	1915	1920-21	1925
Tennessee	1916-17	1920	1918-19	1922	.....	....
Texas	1914-15	1918	1922-23	1926	.....	....
Utah	1913-14	1917	1922-23	1926	1921-22	1926
Vermont	1913-14	1917	1918-19	1922	.....	....
Virginia	1914-15	1918	1917-18	1921	.....	....
Washington	1914-15	1918	1918-19	1922	1914-15	1919
West Virginia	1917-18	1921	1920-21	1924	.....	....
Wisconsin	.....	....	1915-16	1919	.....	....
Wyoming†	.....	....	.....	....	.....	....

* Require a four-year high school education or its equivalent.
† No fixed standard.
1. The higher standards in Arkansas and Connecticut are evidently not enforced by the sectarian licensing boards of those states.

IMPROVEMENTS IN LICENSURE SINCE 1904

In table N, the advances in standards of licensure are shown for all states since 1904. The most marked increase is in regard to the requirement of college work in forty-three states—referred to also in table M. An equally great increase is shown in the number of states—now forty-seven—which are refusing to recognize low-grade medical colleges. One other state, Arkansas, could be added to the two lists referred to, were it not for the eclectic board, which is still "recognizing" the inferior schools.

Although marked improvements have been made in state requirements for licensure, nevertheless there is still room for improvement, as indicated by the last column. The greatest needs are for a wider requirement of (*a*) the hospital intern year; (*b*) two years of premedical college work, and (*c*)—

TABLE N.—*Advances in State License Requirements in Twenty Years*

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1925	Increase	
Preliminary Education—				
Any requirement	20	46	26	4[1]
A standard four-year high school education or higher	10	46	36	4[1]
One year or more of college work	0	43	43	7[2]
Two years of college work as a minimum	0	39	39	11[2]
That all applicants be graduates of a medical college	36	49	13	1[3]
That all applicants undergo an examination for license	45	50	5	0
Hospital intern year required	0	12[2]	12	38
Full authority by board to refuse recognition to low-grade colleges	14	48	34	2[4]
Boards refusing to recognize low-grade colleges	5	46[5]	41	4[1]
Reciprocal relations with other states	27	45	18	5[6]
Single boards of medical examiners	36	45	9	5[7]

1. District of Columbia, Massachusetts, Wyoming and (because of its eclectic board) Arkansas.
2. See Table M and footnotes.
3. Colorado.
4. District of Columbia and Massachusetts.
5. See Table D. In two states, Arkansas and Connecticut, each of which has three separate boards, only the regular (non-sectarian) boards have refused recognition to low standard medical colleges and have enforced higher standards of preliminary education.
6. Alaska, Connecticut, Florida, Massachusetts, Rhode Island. To this list should be added the outlying territories of Canal Zone and the Philippine Islands, which have no provision for reciprocity. Porto Rico has recently established reciprocal relations with New York.
7. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Louisiana and Maryland.

a matter of more vital importance—practical tests in the licensing examinations. The states in which the boards are making a really effective use of practical examinations are Illinois, Massachusetts, Minnesota, North Dakota, Ohio and South Dakota. That method is being followed to a certain extent in a few other states.

IN CONCLUSION

In the publication of these statistics, the endeavor has been to show the actual facts, a knowledge of which is always beneficial. We reiterate our acknowledgments to the officers of state licensing boards for their ready cooperation and the complete reports they have furnished. We believe that the information here published will be of service to the medical colleges and the state boards as well as to the public.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners was organized in 1915. It now consists of twenty-one members, including the three Surgeon Generals of the Army, Navy and Public Health Service, and one other representative of each of those services, three representatives of the state medical licensing boards and twelve members appointed at large. The personnel of the board at present is as follows:

Dr. Horace D. Arnold, president; Major-Gen. Merritte W. Ireland, Surgeon General, United States Army; Rear Admiral Edward R. Stitt, Surgeon General, United States Navy; Surg. Gen. Hugh S. Cumming, United States Public Health Service; Com. Charles M. Oman, Col. Joseph F. Siler, Surg. George W. McCoy, Dr. Walter E. Garrey, Dr. Walter L. Bierring, Dr. Allen B. Kanavel, Dr. David Strickler, Mr.

John G. Bowman, Dr. Eugene L. Opie, Dr. Lewis A. Conner, Dr. J. M. T. Finney, Dr. W. S. Leathers, Dr. C. H. Perry Pepper, Dr. J. Whitridge Williams and Dr. Howard T. Karsner. The secretary-treasurer is Dr. J. S. Rodman, and the managing director is Mr. E. S. Elwood.

Up to Dec. 31, 1921, eleven examinations had been held, as follows:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33.3
Oct., 1917	Chicago	28	22	6	21.5
Jan., 1918	New York	20	18	2	10.0
Apr., 1918	Ft. Riley, Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago, New York	16	15	1	6.3
June, 1919	Philadelphia	52	51	1	1.9
Feb., 1920	Chicago, St. Louis	48	36	12	25.0
May, 1920	Philadelphia	60	46	14	23.3
Feb., 1921	Rochester, Minn.	16	11	5	31.3
June, 1921	Boston	40	37	3	7.5
	Totals	325	268	57	14.4

Following the completion of each examination shown in the table, those who passed were granted the board's certificate, a total by Dec. 31, 1921, of 268.

New Methods Adopted

In 1922, however, the examinations were divided in three parts, as follows: Part I, a written examination in the six fundamental medical sciences: anatomy, including histology and embryology; physiology, physiologic chemistry; general pathology; bacteriology; materia medica and pharmacology. Part II, a written examination in: medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene, and medical jurisprudence. Part III, a practical examination in each of the following four subjects: (*a*) clinical medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; (*b*) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (*c*) obstetrics and gynecology; (*d*) public health, including sanitary bacteriology and the communicable diseases.

Parts I and II are written examinations held in any class A medical school, and part III is an entirely practical and clinical examination given by subsidiary boards in Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, Portland (Ore.), and Nashville. The fees are as follows: registration fee, $5; part I, $10; part II, $15; part III, $50.

Examinations in Part I

Three examinations in part I were held in 1925, as follows:

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1925	143	116	6	21	14.7
June, 1925	324	205	31	88	27.2
September, 1925	141	79	13	49	34.8
Totals, 1925	608	400	50	158	26.0
1924	591	415	69	107	18.1
1923	507	349	77	81	16.2
1922	388	263	58	67	17.3
Totals	2,094	1,427	254	413	19.7

Altogether, 608 candidates were examined in 1925, as compared with 591 in 1924, 507 in 1923 and 388 in 1922. During the last four years, under the new plan, 2,094 candidates were examined, or more than six times as many as were examined in the six years of the old plan—from 1916 to 1921. Of all those examined in part I during the last four years, 413, or 19.7 per cent, failed.

Examinations in Part II

Three examinations in part II were held in 1925, as follows:

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1925	84	74	...	10	11.9
June, 1925	167	151	...	16	9.6
September, 1925	91	84	...	7	7.7
Totals, 1925	342	309	...	33	9.6
1924	267	227	...	40	14.9
1923	192	170	2	20	10.4
1922	109	90	...	19	17.4
Totals	910	796	2	112	12.3

During 1925, 342 candidates were examined in part II, as compared with 267 in 1924, 192 in 1923 and 109 in 1922. Altogether, 910 candidates were examined during the four years, of whom 112, or 12.3 per cent, failed.

Examinations in Part III

The examinations in part III in 1925, which were entirely clinical and practical, were held in several of sixteen subsidiary centers in different parts of the country. The results of the examinations were as follows:

Examinations of	Total Examined	Passed	Failed	Percentage Failed
1922	28	28	..	0.0
1923	76	75	1	1.3
1924	120	114	6	5.0
1925	217	206	11	4.1
Totals	441	423	18	4.1

In 1925, 217 candidates were examined in part III, as compared with 120 in 1924, seventy-six in 1923 and twenty-eight in 1922. During the four years, therefore, 441 candidates were given the final practical examination and, of these, eighteen, or 4.1 per cent, failed.

Total Individuals Examined During Three Years

Year	Parts I, II and III, Excluding Duplications				
	Examined	Passed	Incomplete	Failed	Percentage Failed
1922	525	381	58	86	16.4
1923	775	594	79	102	13.4
1924	978	756	69	153	15.6
1925	1,197	915	50	202	17.3
Totals	3,445	2,646	256	543	15.8

Omitting duplicates, there were 1,167 individuals who took the National Board's examinations during 1925, as compared with 978 in 1924, 775 in 1923, and 525 in 1922. The percentage of failures was 17.3.

In General

Of the failures, it is noted that during the last four years, 19.7 per cent of the candidates failed in part I, 12.3 per cent of the candidates failed in part II, and 4.1 per cent of the candidates failed in part III. Altogether, 3,445 candidates participated in the National Board's examinations during the four years since Jan. 1, 1922, and of these, 543, or 15.8 per cent, failed.

Of those who took examinations in parts I and II during the four years, 256 are listed as incomplete. These are candidates who took examinations in all but one of the subjects included in parts I and II and are listed as incomplete until they have taken an examination also in the remaining subject. In the statistics, however, although mentioned separately, they are counted as successes and not failures.

Recognition of the National Board's Certificates

Holders of certificates from the National Board of Medical Examiners are registered without further examination in thirty-two states, the Canal Zone, Porto Rico and Hawaii.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 15, 1926

STATE LICENSE STATISTICS

For the twenty-third consecutive year, statistics are offered based on examinations held by state licensing boards during the last calendar year. The publication of these complete statistics is made possible through the cordial support received from the secretaries of licensing boards, to whom we express sincere appreciation.

DATA ACCURATE

Reports of individual examinations have been carefully checked with lists of graduates furnished by medical college officials. In this way any error in regard to the full name of the physician, name of the medical school or year of graduation has been corrected and the accuracy of the statistics thereby assured. Through this checking, also, attention is directed at once to applicants who graduated from diploma mills or other institutions unworthy of consideration as medical schools. In such instances state officials are promptly notified, and in most instances the licenses are revoked.

IMPORTANCE OF LICENSURE STATISTICS

The publication of state licensure statistics permits comparative study of the methods followed by the various boards and their relative efficiency. The statistics also show that, from the standpoint of scientific medicine, methods of licensure have been immensely improved during the last twenty-five years. The attention called to the high percentage of failures of graduates of certain medical schools has led to prompt improvements, or recognition of them is withdrawn by the licensing boards.

As improvements in entrance requirements, teaching facilities and qualifications of teachers have been made in medical schools, corresponding advances in educational requirements have been adopted by the majority of licensing boards. Since 1908, for example, the requirement of two years of college work in addition to a high school course has been adopted by thirty-nine states.[1] Thus, the licensing boards are supporting the better medical schools in the enforcement of this requirement. Again, since 1914, the number of states refusing recognition to seriously inferior medical schools has increased from fourteen to forty-eight of the fifty states, counting Alaska and the District of Columbia.[2] In the majority of states, therefore, so far as the licensing of physicians and surgeons is concerned, the public is well protected against incompetent physicians. The public is still at the mercy of improperly trained and incompetent practitioners being turned out by the various "schools" of healers bordering on medicine, some of whom have been licensed in certain states against the advice of the medical profession.

DIFFERING STANDARDS OF LICENSURE ILLOGICAL

The medical licensing boards of all states now require of physicians a reasonably high standard of educational and professional qualifications. The minimum standard consists of a high school education; two years of college work; four years of study in a properly established medical school—including a training in the fundamental medical sciences and the practical application of this knowledge by the student in the examination and care of patients in dispensaries and hospitals—and a year's internship in a general hospital, where the student assumes a greater responsibility in the care of the sick while still under the supervision of the hospital staff. If this minimum requirement for training is considered as essential for physicians, a corollary is that no lower standard of education and training should be permitted for any groups of healers who also assume responsibility for the lives of sick or injured people. The legality of a single but reasonably high standard of qualification for all who are to practice the healing art was splendidly set forth two years ago by Harry Eugene Kelly, a Chicago attorney, in an article on "Regulation of Physicians by Law."[3] The adoption of a single standard therein advocated is the only way to safeguard the public against ignorance, bungling and incompetence on the part of those who are licensed to practice medicine.

STATE HOUSE-CLEANINGS IN LICENSURE

During the last three years, Connecticut has been engaged in cleaning up the serious mess caused by the Eclectic Board of Medical Examiners in the licensing of 167 "graduates" of inferior colleges and diploma mills. Since this cleansing process began, the number of such candidates licensed each year decreased from seventy-four in 1922 to none in 1924. During 1925, in spite of the evidence brought out in regard to the fraudulent character of two diploma mills, the Eclectic Board of Connecticut, which is controlled by the debarred eclectic physicians, examined and certified for license another "graduate" of one of those institutions. The license was refused, however, by the health

1. See table M, page 1549.

2. See table D, page 1542.

3. A. M. A. Bull., June, 1924, part II.

commissioner of Connecticut, and mandamus proceedings were resorted to. The decision will soon be rendered. In Missouri, also, a new licensing board has been established; the two medical schools in that state have been prosecuted, and conditions in licensure have been much improved. Whether the charters of the two diploma mills are to be revoked is to be decided by the Missouri Supreme Court. One of these mills, the Kansas City College of Medicine and Surgery, in spite of the legal proceedings, issued diplomas to four "graduates" during 1925, to whom the Arkansas Eclectic Board promptly granted licenses—as well as to fifteen other graduates of this school whose diplomas bore earlier dates. It is evident, therefore, that a vigorous house-cleaning in licensure is much needed in Arkansas also.

NEED OF FURTHER PUBLICITY

The protection of the public in regard to the menace from sectarians of various types depends mainly on publicity. State regulations are based on public sentiment, which thus far has been formulated largely by the selfish and misleading clamor of sectarian groups. It is important, therefore, that a wider publicity be given to the established and reliable facts regarding modern medicine and the benefits obtainable from the improved methods of diagnosis and treatment. Indeed, it is believed that public sentiment is now turning rapidly to the truths of scientific medicine.

From the standpoint of medical licensure, the solution of the problem is simple: Secure in each state one medical practice law establishing a reasonably high standard of educational and professional qualifications which should be possessed by every one who is to secure the legal right to practice the healing art, and a competent board of medical examiners to carry out the provisions of the law.

"HOOCH," "HOME BREW" AND COPPER

The toxicity of many of the heavy metals has been known for generations, yet these substances have not been regarded as a menace to human health except in limited instances where industrial conditions or occupational circumstances exposed workers to the chemical hazards in some uncommon way. However much the student of vocational diseases might become concerned with the effects of metallic poisons, the treatises on public health and personal hygiene rarely discuss them except in a casual manner. As a consequence of modern economic and social changes, the latent dangers of poisoning from certain heavy metals are now suddenly presented to the public at large. To gasoline and the automobile we owe the nation-wide concern about lead;[1] suicides and syphilis have awakened a new interest in mercury not merely as a drug but also as a poison; and now the advent of the "bootlegger" and home brew has brought copper to our toxicologic attention.

In his Mellon Lecture at Pittsburgh, Mallory[2] of Boston pointed out that we are constantly exposed to the action of copper. The fact that our organs on chemical examination yield a certain amount of it does not mean that copper is a normal and necessary component of the body but that we cannot get away from it. This does not mean, Mallory adds, that we are all suffering from copper poisoning. It seems perfectly evident that we can handle a certain amount of the metal without danger, perhaps from 5 to 10 mg. a day, possibly more. The only visible effect may be the presence of a little hemofuscin in fibroblasts in the liver and some of the other organs where it cannot be transformed into hemosiderin and then be gradually dissolved and removed. If, however, the amount absorbed exceeds a certain definite limit, the danger of pigmentation of the liver and pancreas is evident. Mallory sees the evidence slowly but steadily accumulating in favor of the view that chronic poisoning with copper causes the symptom complex known under the different names of hemochromatosis, bronzed diabetes and pigment cirrhosis. As if it were not damaging enough to the reputation of alcohol to be charged directly with being a possible cause of hemochromatosis, chemists have demonstrated that present-day distilled liquors may contain as much as 185 mg. of copper per liter. It is reported that the director of the division of foods and drugs of the department of public health of Massachusetts has tested 798 samples of "hooch" and found copper present from a trace up to 32 mg. to the liter in 10.8 per cent. Samples of even "home brew" have been found on chemical examination to show the presence of 25 mg. of copper to the liter. The introduction of the metal is not to be attributed to malicious intent but rather to the action of organic acids in the mash distilling over with the alcohol and acting on the copper worm of the condenser when that metal is used. Mallory states that cocktail shakers are usually made of copper or brass and lined with silver or tin. When the latter metals are worn or dissolved off, the acids, for example, citric, in the ingredients readily attack the copper. The shakers used at soda water fountains for mixing lemonades are usually made of copper. It would be manifestly unjust to imply that alcoholic beverages provide the only likely sources of copper that man may ingest. Copper pots and kettles, copper and brass pipes, find use in culinary practices or the experiences of everyday life.

Mallory's advice seems wholesome: Copper is an exceedingly useful and indispensable metal in many ways, but it should not be employed where it may

1. "Ethyl Gas"—Tetra-Ethyl Lead, J. A. M. A. **83**: 552 (Aug. 16) 1924. Tetra-Ethyl Lead—Another Industrial Hazard, editorial, ibid. **83**: 1511 (Nov. 8) 1924. The "Ethyl" (Tetra-Ethyl Lead) Gasoline Report, ibid. **86**: 353 (Jan. 30) 1926. Committee Report on Ethyl Gasoline, ibid. **86**: 370 (Jan. 30) 1926. The Absorption of Lead Through the Skin, ibid. **86**: 1286 (April 24) 1926.

2. Mallory, F. B.: Hemochromatosis and Chronic Poisoning with Copper, Arch. Int. Med. **37**: 336 (March) 1926.

come in contact with foods or drinks, especially if they contain acids of any sort, because it is readily dissolved by many of them. This would exclude its use for cooking utensils of any sort, for shakers of cocktails and acid drinks, and for the worms of the condensers in stills. Copper has joined the company of lead, mercury, zinc, arsenic, carbon monoxide, methyl alcohol, and noxious war gases to worry the ranks of the peaceful citizen who only a few years ago could safely be left in complete oblivion of the existence of such hazardous chemical substances.

THE HEMOLYTIC CONSTITUTION

The manifestations of disease are the products of two factors, the patient's own make-up or attributes, and forces from the outside. Much has been done toward elucidating the outside factor, the infections, physical injuries and chemical injuries that are the immediate cause of disease. However, the existence of the individual factor, the special susceptibility to certain affections, has also been recognized at all times, usually under the name of a diathesis of this or that sort. This conception is gaining in importance at present, especially in the field of pediatrics, where different types of children with special predispositions are recognized. The same is true of adults, who also appear to have their tendencies toward particular diseases and their points of special weakness.

Draper, in his book "The Human Constitution," defines constitution as the "aggregate of hereditarial characters, influenced more or less by environment, which determines the individual's reaction, successful or unsuccessful, to the stress of environment." Among these hereditarial characters, Gänsslen[1] and his coworkers place the tendency to increased blood destruction, which may become manifest, depending on the outside influences to which the individual is exposed, as hemolytic icterus. After several years of study of this condition, Gänsslen finds that one can speak of a definite "hemolytic constitution," characterized by congenital increased blood destruction, and manifested in fully developed cases by anemia, icterus and enlargement of the spleen. On investigating the families of persons with these symptoms, he found many instances of the condition, either latent or in active form. In fact, hemolytic icterus is a much more frequent disease than is commonly thought. The frequent lack of definite and active symptoms enables its presence to escape notice.

In its complete development, the disease is manifested by icterus, anemia, enlargement of the liver and spleen, and urobilinuria; with decreased resistance of the erythrocytes, anisocytosis and microcytosis. The icterus is variable in degree, as is the anemia. Both are increased during the so-called hemolytic crises. These are frequently evoked by some intercurrent factor, infections, pregnancy or psychic causes, which provide the occasion for the hitherto latent condition to become active. The crises are often accompanied by colicky pains over the liver and spleen, and, with the icterus, may be taken for gallbladder disease. The hemoglobin is ordinarily from 40 to 70 per cent, but may fall during a crisis to 20 per cent. Examination of the red blood cells reveals the essential nature of the disease: anisocytosis and microcytosis indicate an inferior quality of the cells, which is further shown by their increased fragility in salt solution. These changes vary considerably in degree, but there is close agreement between the abnormality of form and decrease in resistance. Gänsslen regards this as the fundamental condition. The icterus and anemia are secondary consequences of the increased blood destruction, when it is no longer compensated by increased formation and the liver is no longer able to cope with the increased iron metabolism. The subjective symptoms are few; if one may quote the oft-cited words of Chauffard, the patients are more yellow than sick.

According to Gänsslen, the types, or really degrees, of the hemolytic constitution range from the complete disease picture to the latent form, which is entirely symptomless, and detected only by blood examination and investigation of other members of the family. Compensated forms occur, in which one or more of the chief symptoms are lacking. Thus, among Gänsslen's cases there were 35 per cent without anemia, 40 per cent without icterus, 30 per cent without enlargement of the spleen, and 10 per cent without definite lessening of the resistance. Then there is a group of mildly affected persons, symptomless, with slight or even no change in the red cells, who transmit the hemolytic constitution to their offspring. Recognition of all these incomplete and latent forms is based on suggestive symptoms, usually some change in the red cells, and occurrence of the condition, often in more complete form, in other members of the family. The latent types, given the proper stimulus from the outside, may become active at any time.

An interesting point, emphasized by Gänsslen and demonstrated in many of his cases, is the frequent combination of other congenital anomalies with the hemolytic constitution. Anomalies of the skull, tower skull and negroid shape, are especially frequent; also polydactylia, microphthalmia, epicanthus, amblyopia, deformities of the ear, and congenital heart lesions. Combinations with endocrine disturbances also occur. This association with congenital defects may help in making the diagnosis of familial hemolytic icterus, and is of course an additional argument for its constitutional character.

One extensive family tree investigated by Gänsslen comprised six generations and 169 persons. Of these,

1. Gänsslen, M.; Zipperlen, E., and Schüz, E.: Die hämolytische Konstitution, Deutsches Arch. f. klin. Med. **146**: 1, 1925. Gänsslen: Ueber hämolytischen Ikterus, ibid. **140**: 195, 1922.

as far as could be determined, eleven had fully developed hemolytic icterus; thirty-three had compensated cases; there were thirteen mild cases; and twenty-six persons, including many of those with hemolytic symptoms, had anomalies of the skull. He finds that hemolytic icterus is inherited as a dominant character, although it sometimes appears to be recessive on account of the frequent latent form, and appears in and is transmitted by both males and females.

Nothing much need be done for the mild or latent cases of this disease. Splenectomy usually is advised for all young persons with high grade anemia or severe hemolytic crises. While not often fatal in itself, early deaths are rather frequent among persons with hemolytic icterus. The mortality of the operation is low, and the beneficial effects on the symptoms and general condition are often astounding. The anemia and icterus usually disappear entirely, although the changes in form and resistance of the red cells may remain. A return of the icterus after removal of the spleen, incident to some intercurrent infection, has been noted, and this fact furnishes additional evidence that hemolytic icterus is primarily a disease of the blood cells, and is not due to overactivity of the spleen.

Current Comment

LICENSING OF FOREIGN PHYSICIANS

Heretofore physicians from abroad have always been welcomed by licensing boards in this country, and in most states the requirements, if different at all, were less strict than for graduates of our own American schools. In this connection, physicians coming from Canada have hardly been considered as foreigners. Their qualifications are as clearly recognized as those coming from medical schools of the United States. This is because Canadian physicians have had their part in the movement instigated by the medical profession of this country to improve the standards of medical education and licensure. Many of the physicians who came from abroad, also, have long since become honored members of the communities in which they reside and are mostly active members of our medical organizations. Even at this time, therefore, there is no desire to establish unreasonable restrictions against foreign physicians, especially those who are bona fide graduates of well recognized medical schools and who come from countries whose laws, customs and manners of living are similar to those of the United States. Since the World War, however, a necessity for reasonable restrictions has developed. The numbers of physicians seeking licensure in this country have been increasing, as a result largely of the financial stress in their own countries from which they are endeavoring to escape. Among these there has been an unusual proportion whose credentials were of doubtful validity or distinctly fraudulent. It has become necessary for state authorities to establish legal safeguards over the admission of physicians from abroad. The requirement of American citizenship as an essential for the license has been adopted in eleven states;[1] in ten other states[2] foreign physicians must have taken out their first naturalization papers before being eligible for a license, and in five states[3] foreign physicians must have declared their intention to become American citizens. In Michigan and New York, in uncertain cases, a year's work in a medical school in this country must have been completed, while in Pennsylvania the foreign physician is required to have completed an internship in a hospital recognized by the licensing board. These regulations, although representing a change of attitude on the part of state licensing boards, are still much more lenient than the requirements in countries abroad with which American physicians must comply. There is still the desire to welcome from abroad those who are properly qualified and who will become reputable and worthy members of their communities. The restrictions are necessary, however, to prevent the inpouring of those who are not properly qualified or who in other respects are undesirable. Under no circumstances should physicians from abroad be accepted unless their credentials have been carefully verified and unquestionable proofs obtained of identity.

ARKANSAS STILL INACTIVE

Arkansas is one of the two remaining states that have separate boards of eclectic medical examiners. In the last ten years this board has licensed 227 graduates of inferior medical schools, of whom 199 held degrees from the Kansas City College of Medicine and Surgery—exposed two years ago as a diploma mill—for which legal proceedings looking toward the revocation of its charter are now in process. Following the exposure of the Missouri diploma mill ring, vigorous legal measures were promptly and successfully taken in Connecticut, California and other states toward revoking the licenses of those registered on the basis of such diplomas. Arkansas, however, has continued inactive in spite of the odium resting on the character of such applicants. In spite of the glaring disclosure of the Kansas City College of Medicine and Surgery as a diploma mill, the eclectic board has calmly continued to provide state licenses for such "graduates"! Although only one such graduate was licensed in 1924, this was evidently due not to any qualms of conscience on the part of the board but to the temporary inactivity of the diploma mill concerned because of the court investigation. Is it not time that Arkansas should undergo a house cleaning? Is it content to remain in the clutches of Alexander and his diploma venders? Is Arkansas satisfied to have its sick and injured citizens subjected to such ignorance, incompetence and bungling?

1. These states are: Arizona, Arkansas, Florida, Illinois, Indiana, Kansas, Kentucky, Mississippi, South Dakota, Tennessee and Wyoming.
2. These states are: Alabama, Delaware, Louisiana, Maryland, Michigan, New Hampshire, North Dakota, Oregon, Texas and Virginia.
3. These states are: Minnesota, Nebraska, New Jersey, New York and Ohio.

Education of Spartan Women.—Not much is known of the training imposed on the Spartan girls; but it included both gymnastics and music.—Leonard: History of Physical Education, pp. 19-20.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Sanitation in Mining Towns.—A survey of mining towns in Alabama made by the U. S. Bureau of Mines, cooperating with the U. S. Public Health Service, indicates that sanitation in these towns receives more consideration than in most of the other coal fields of the country. At one time, communicable diseases in these communities made it necessary to employ 165 men in order to keep 100 men working, and mines occasionally were forced to shut down until an epidemic passed. This led the larger mining companies to install health departments, and health conditions have improved; in the last few years, there has been a decrease of thirty-five men per hundred necessary to keep 100 men working, and no epidemic has closed any mines in the state. The state board of health through county health units cooperates in this work; schools are inspected by camp physicians and the county health officers, when available. It is still difficult in mining towns where employees own their own homes to maintain sanitation. The sanitary rating of the towns covered by the survey varied from 43.75 to 95.50, and averaged 69.32. The water supply had the best rating of all the features; sewage disposal had a rating of about 50 per cent of the normal, and the rating on general sanitation was fair. Only the very small mines in Alabama are not actively engaged in sanitary work now, and while they assert that they are not financially able to maintain health departments, they have adopted many of the methods put into operation by the larger mining companies.

ARIZONA

State Medical Election.—At the recent annual meeting of the Arizona State Medical Association at Globe, April 26-28, Dr. Charles S. Vivian, Phoenix, was elected president elect; Drs. Arthur C. Carlson, Jerome, Hilary D. Ketcherside, Yuma, and Harold W. Rice, Morenci, vice presidents; Dr. Clarence E. Yount, Prescott, treasurer, reelected, and Dr. Delamere F. Harbridge, Phoenix, secretary (reelected for the tenth time). The next meeting will be at Yuma in April, 1927.

CALIFORNIA

State Medical Election.—At the recent annual meeting of the California Medical Association, Oakland, April 26, Dr. William T. McArthur, Los Angeles, was elected president; Dr. Percy T. Phillips, Santa Cruz, president-elect; Dr. Robert V. Day, Los Angeles, vice president, and Dr. Emma W. Pope, San Francisco, secretary.

Hospital News.—The Children's Hospital, San Francisco, will build this year a wing costing about $350,000 for a maternity department and physiotherapy department.——The new Providence Hospital, which is being erected at Central Avenue and Thirtieth Street, Oakland, is expected to be completed not later than July; it will have a total capacity of 350 beds.

Japanese Quack Fined.—A Japanese, one A. Nemoto of East San Pedro, was arrested, February 15, charged with violating the state medical practice act. Nemoto claimed to be a graduate of medicine of Tokyo University and had been located in East San Pedro more than a year. His reception room was an innocent appearing place with nothing to indicate that it was a doctor's office, but when Nemoto was forced to unlock the adjoining room, after he had assured the authorities that he was not practicing medicine and that the room was not his, a completely equipped doctor's office was found. It contained operating tables, surgical instruments, sterilizers, hypodermic needles, a large supply of medicines and record slips, indicating that Nemoto had treated a number of Japanese patients. When arraigned, Nemoto pleaded guilty and stated that he had assembled the equipment to use in Mexico, where he said he was arranging to go; he said further that he had treated a few of his friends, not knowing that he was violating the law. He was sentenced to pay a fine of $100 or serve a hundred days in jail. He paid the fine.

COLORADO

Dr. Mills Resigns.—Dr. Ralph G. Mills, professor and head of the department of pathology, University of Colorado School of Medicine, Denver, has resigned to accept a position on the permanent staff in pathology of the Mayo Clinic, Rochester, Minn., which carries with it a full professorship in pathology at the University of Minnesota. Dr. Mills will take up his work in Rochester before July 1.

CONNECTICUT

Meaning of Certified Oysters.—The state department of health says that a certificate is not a guarantee of each particular shipment of oysters, but that all desirable safeguards have been taken to insure that the public is receiving a safe product. Certification in Connecticut means that: (1) the dealer agrees to ship oysters only from areas which have been inspected and analyzed by the state department of health and which have been found to be satisfactorily located; (2) the shucking and packing establishment has been inspected and found in a sanitary and satisfactory condition, and (3) all persons in the establishment engaged in shucking, handling and packing oysters have been examined and found free from typhoid bacilli.

GEORGIA

Hospital News.—The new Blackman Health Resort, 1824 Peachtree Road, Atlanta, succeeding the Blackman Sanatorium at 172 Capitol Avenue, was opened, March 29.——Dr. Joe R. Clemmons has been appointed superintendent of the Macon Hospital, Macon, effective, May 1.

Personal.—Dr. Charles L. Ridley, city-county health officer at Macon, resigned, May 1, to become the chief medical director of the Bankers' Health and Life Insurance Company.——Dr. John W. Oden, for eight years on the staff of the Georgia State Sanitarium, Milledgeville, has resigned to accept a position with the Children's Hospital for the Feeble Minded in Augusta.——Dr. John M. T. Finney, Baltimore, was recently the guest of the Richmond County Medical Society.

ILLINOIS

Dr. Krafft Honored.—The meeting of the Physicians' Fellowship Club, Chicago, May 7, was held in honor of Dr. Jacob C. Krafft, president of the Illinois State Medical Society. Among those who rendered tribute to Dr. Krafft's service to medicine in Illinois were Drs. Edward H. Ochsner, John R. Neal, Harold M. Camp, James W. Vanderslice, Jeremiah H. Walsh and William D. Chapman.

Personal.—Dr. Placid N. Chiasson, Griggsville, has been elected president of the Pike County Medical Society; Dr. William Shastid, secretary and treasurer of the society for the last twelve years, retired, and Dr. Frank N. Wells, Pittsfield, was elected secretary-treasurer.——Dr. Charles Lieber, Waukegan, has been reappointed county physician of Lake County.——Dr. Edward A. Glasgow, Mulberry Grove, has been reelected president of the Bond County Medical Society and Dr. Thomas G. Charles, Beardstown, has been elected president of the Cass County Medical Society.

Society News.—The Golden Anniversary of the Central Illinois Medical Society was celebrated at Pana, April 27. Dr. John H. Miller, Pana, gave an address on "The Early History of the District Medical Society of Illinois." Clinics were held at the Huber Memorial Hospital. Dr. Arthur O. Fisher, associate in clinical surgery, Washington University Medical School, St. Louis, gave an illustrated lecture on "Recent Aids in the Diagnosis of Gallbladder Diseases and Other Abdominal Conditions," and Dr. Llewellyn Sale, St. Louis, spoke on "Tests for Liver Function"; Dr. Theodore Thompson, Shelbyville, was elected president of the society; Dr. Jesse P. Simpson, Palmer, vice president, and Dr. Franklin A. Martin, Pana, secretary-treasurer.

Counties Having Highest Tuberculosis Mortality.—Union County and the contiguous counties of Pulaski and Alexander in the southern part of the state comprised the area of heaviest tuberculosis mortality last year, according to the state health director; Union County had a mortality rate of 296 per hundred thousand population, and Pulaski and Alexander counties, 239 and 154, respectively. The area of lightest tuberculosis mortality comprised Woodford, Marshall and Carroll counties in the northern part of the state, where the rates were 10.20 and 20.5, respectively. Among the forty-four cities of 10,000 or more population in Illinois,

the highest mortality rate from tuberculosis (276) was reported from Lincoln; then came Jacksonville (208); then Cairo (200); Ottawa had the lowest municipal rate (26); then came Rockford (32); then Streator (33).

Chicago

University News.—Dr. David J. Davis gave the last of the series of lectures on the history of medicine at the University of Illinois College of Medicine, April 21; his subject was "Contributions Which the Quakers Have Made to Medicine."

Cooperation Among Medical Libraries.—Representatives of the larger medical libraries of Chicago met, May 8, to discuss the medical library situation of that city with a view to working out some form of cooperation whereby the duplication of expensive and rarely used material may be avoided and such material be made mutually accessible. As a preliminary to such action, it seemed necessary to agree on some outline of the scope of the various libraries. Those present were impressed with the importance of such cooperation and the benefits that might be expected in the expenditure of available funds as well as in the general administration of the several libraries. Dr. William F. Petersen, professor of general medicine, University of Illinois College of Medicine, was appointed chairman of a committee to work out some definite form of coordination.

Hospital News.—The Garfield Park Hospital is planning a $690,000 building to be constructed on the site of the present nurses' home. St. Anne's Hospital is drawing plans for a 250 bed addition which will cost about $800,000. ——The University of Chicago has been bequeathed $500,000 by the will of Mrs. Harriet Smith for the construction of a contagious disease hospital to be known as The Charles Gilman Smith Hospital. ——The Albert Billings Memorial Hospital group at the University of Chicago will be turned over for operation about Jan. 1, 1927.——Construction work was started, May 3, on the new six story Rogers Park Hospital at 6970 North Clark Street, the capacity of which will be 102 beds. Dr. F. Patrick Machler, formerly superintendent of the Iroquois Hospital, is president of the organization.——A $275,000 medical office building is being erected on the West Side at Madison Street and Kilbourn Avenue, which is being financed by the West Town State Bank. There will be forty offices for physicians and dentists.

INDIANA

Hospital News.—The board of trustees of the Methodist Hospital has authorized the expenditure of $850,000 to improve the Methodist hospitals at Indianapolis and Gary.——A banquet was tendered, April 8, to members of the Laporte County Medical Society and many other physicians in the surrounding cities to celebrate the formal opening and dedication of the new Clinic Hospital Building at Fifth and Pine streets, Michigan City. Dr. Burton Hazeltine, Chicago, was toastmaster, and the principal speaker was Dr. Charles B. Reed, formerly professor of obstetrics at Northwestern University Medical School, Chicago.

Personal.—Dr. Harvey H. Martin, Laporte, was elected president of the Northern Tri-State Medical Association (Ohio, Indiana, Michigan) at the recent meeting in Lima, Ohio.——Dr. C. M. White celebrated the completion of his fiftieth year in medical practice at Clinton, March 11.——Dr. Charles H. DeWitt, Valparaiso, has been appointed health officer of Porter County.——The governor has reappointed Dr. William A. Spurgeon, Muncie, and Dr. Jesse W. Bowers, Fort Wayne, members of the state board of medical registration for terms of four years.——Drs. Eli L. Youngblood and Paul E. Wilson have been appointed members of the board of health of Boonville.

KANSAS

State Medical Meeting.—The visiting guests at the sixtieth annual meeting of the Kansas Medical Society, Kansas City, May 4-6, included Dr. John M. Dodson, Chicago, former dean of Rush Medical College, who spoke on "Medical and Health Education of the Laity"; Dr. Harry C. Goodson, Colorado Springs, "General and Local Rest in the Treatment of Pulmonary Tuberculosis"; Dr. Jacob P. Greenhill, Chicago, "Management of the Second Stage of Labor"; Dr. George C. Mosher, Kansas City, Mo., "The Campaign for Better Obstetrics"; Dr. Hiram Winnett Orr, Lincoln, Neb., "Fractures", and Dr. Warren H. Cole, St. Louis, "Gallbladder Research Work."

KENTUCKY

Miscellaneous Items.—The health officer of Charlestown closed the schools of that community, April 22, it is reported, because of an outbreak of five cases of smallpox among the pupils; graduating exercises were to have been held in the high school the following day.——Dr. Ralph Holt, Grahamville, has been elected county physician of McCracken county for four years, to succeed Dr. Louis E. Young, Milan.——Construction work has started on the new Deaconess Hospital at Clifton Avenue and Straight Street, Covington.——The Good Samaritan Hospital, Lexington, has let the contracts for a $300,000 four story addition to be erected on South Limestone Street.

Court Upholds Board of Health.—Judge Clay of the Court of Appeals, Frankfort, March 20, upheld the state board of health's ruling which requires that no person shall become a member of any public or private school within the jurisdiction of the board, either as a teacher or a pupil, without furnishing a certificate from a reputable physician that he has been successfully vaccinated, and has been revaccinated at least once every seven years. The judge overruled the motion of several persons from Ashland for a temporary injunction enjoining the Boyd County Board of Health, the health officer and school board of Ashland from enforcing this rule; he said that the state and local boards of health have the power when there is a reasonable apprehension of an epidemic of smallpox in the school to order vaccinations, and that the evidence in this case did not disclose any abuse, on the part of the defendants, of this discretion.

MARYLAND

State Medical Election.—At the one hundred and twenty-eighth annual meeting of the Medical and Chirurgical Faculty of Maryland, April 27-29, Baltimore, Dr. Thomas S. Cullen was elected president; Drs. John L. Riley, Snow Hill, Standish McCleary, Baltimore, and Frank W. Keating, Owings Mills, vice presidents; Dr. Joseph Albert Chatard, Baltimore, secretary, and Dr. Charles E. Brack, Baltimore, treasurer.

Child Health.—Sponsored by the American Child Health Association, a program to improve child health will be presented throughout the state during May; exercises have been held in the schools throughout the state to forward the program. Dr. James H. Mason Knox, Jr., of the state health department, is chairman of a committee of ninety who are endeavoring to obtain a wide-spread cooperation in carrying out the program.

University News.—Johns Hopkins University Medical School, Baltimore, has created the position of secretary, to which Lawrence H. Baker, Ph.D., has been appointed. Dr. Baker will also act as registrar of the medical school.——Dr. Horace Lo Grasso, superintendent, J. N. Adam Memorial Hospital, Perrysburg, N. Y., gave one of the De Lamar lectures at the Johns Hopkins University School of Hygiene and Public Health, April 12, on "Clinical Results of Heliotherapy."

Charles E. Dohme Lectures.—Dr. Walter Ernest Dixon, professor of materia medica and pharmacology, Kings College, University of London, delivered the fourth series of lectures of the Charles E. Dohme lectureship at the Johns Hopkins School of Hygiene and Public Health, May 7-10; the subjects were: (1) The Nature, Secretion and Circulation of the Cerebrospinal Fluid. The Influence of Drugs on the Secretion. (2) The Vascular System of the Brain and Its Comparison with That of the Pulmonary System. The Influence of Drugs on Cerebral Vessels. Shock. (3) The Pituitary Gland. The Influence of Pituitary, Alimentary and Ovarian Extracts. The Action of Pituitary Extracts on the Uterus.

Personal.—Dr. Charles C. Hedges, former health commissioner of Marshall County, W. Va., has assumed the duties of assistant director of the Johns Hopkins Hospital, succeeding A. W. Buck.——Dr. Worth B. Daniels, son of the former secretary of the navy, has been appointed an intern at Johns Hopkins Hospital; Dr. Daniels graduated from the medical school in 1924; Edmund B. Kelly and Christopher Johnston, senior students at the John Hopkins Medical School, have also received appointments as interns. Mr. Kelly is a son of Dr. Howard A. Kelly, and Mr. Johnston is the grandson of the late Dr. Christopher Johnston.——Dr. Wilfred T. Grenfell of the Grenfell Mission gave an illustrated lecture, April 26, at the Medical and Chirurgical Faculty Building, Baltimore, on "Missionary Work in Labrador."

MASSACHUSETTS

Research on Yaws.—The Department of Tropical Medicine of Harvard University Medical School, Boston, and the Bureau of Science, Manila, P. I., have been directing the expenditure of a fund provided by Mr. H. A. Metz, New York, for the study and control of yaws (frambesia tropica). The work has been done in the Philippine Islands, where the government hospitals and laboratories of the bureau of science and the Philippine Health Service afford facilities for clinical and experimental study. The results of about five years' work will be published in a forthcoming number of the Philippine Journal of Science.

Personal.—Dr. Harvey Cushing, Harvard University Medical School, Boston, author of "The Life of Sir William Osler," was awarded the $1,000 prize for "the best American biography teaching patriotic and unselfish service to the people, illustrated by an eminent example," by the judges of the Pulitzer prizes.——Dr. Morton Prince will take up the duties, next September, of associate professor of abnormal and dynamic psychology in Harvard University; Dr. Henry A. Murray, Jr., has been appointed research fellow in abnormal and dynamic psychology and will work with Dr. Prince, who formerly was clinical instructor in diseases of the nervous system at Harvard and professor of nervous diseases at Tufts College Medical School, Boston, from 1902 to 1912.

MICHIGAN

Society News.—The Michigan State Medical Society has planned three postgraduate conferences for May and early June, at Alpena, May 6, Fremont, May 11, and a third conference at Jackson.——The county medical societies that have already arranged for or conducted a special meeting on periodic health examinations are St. Clair, Washtenaw, Alpena, Lenawee, Muskegon, Jackson, Houghton and the Tri-County Medical Society.——Dr. Alexander J. MacKenzie, Port Huron, addressed the St. Clair County Medical Society, April 1, at Port Huron on "Infections of the Gallbladder"; Dr. William H. Marshall, Flint, addressed the society, April 15, on "Periodic Physical Examinations of the Apparently Healthy."——Dr. Robert B. Preble, Chicago, addressed the Calhoun County Medical Society, April 6, on "Pneumococcus Pneumonia."——Dr. Philip D. Bourland, Calumet, addressed the Houghton County Medical Society, April 6, on "Clinical Value of the Electrocardiograph."——Dr. Arthur C. Tompsett, Hesperia, has been elected president of the Newaygo County Medical Society, and Dr. William H. Barnum, Fremont, secretary.

NEW HAMPSHIRE

Cancer Campaign.—The state committee of the American Society for the Control of Cancer, which met at Concord, April 16, under the chairmanship of Dr. Fred E. Clow, Wolfeboro, decided to launch a campaign of education throughout the state in October, and to ask the state medical society to assist in procuring funds from the legislature to build a hospital for incurables.

Meeting of Surgical Club.—At the twenty-eighth semiannual meeting of the New Hampshire Surgical Club, Nashua, April 27, Dr. Frederick W. Johnson, chief, gynecologic service, Carney Hospital, Dr. Donald Munro and Dr. Arthur W. Allen, all of Boston, conducted a clinic at St. Joseph's Hospital; in the afternoon Dr. John P. Bowler, Hanover, gave an address on "Three Causes of Urinary Frequency," and Dr. Fred S. Eveleth, Concord, "The Value of Cholecystography"; Dr. James B. Woodman, Franklin, president of the New Hampshire Surgical Club, presided; there were about 125 persons present, many of whom took part in the discussions.

NEW YORK

Miscellaneous Items.—Dr. Benjamin Kramer, Brooklyn, addressed the Buffalo Academy of Medicine, April 28, on "Newer Aspects of the Etiology and Treatment of Infantile Tetany."——A modern health center has been established in Elizabethtown in Essex County through the efforts of the local health officer, Dr. Alexander Gersen, and various organizations.——Practically every child in Granville under 12 years of age has been immunized against diphtheria, according to *Health News*.——The Montgomery County Medical Society at its first meeting this year adopted plans for children's consultation clinics throughout the county, and instructed its committee to complete arrangements for the clinics in each community.

Personal.—Dr. Melville D. Dickinson, Troy, has been appointed a district state health officer in the state department of health.——Dr. Clara H. Pierce has been appointed physician in charge of the bureau of child hygiene of the department of health of Syracuse.——The gold medal of the New York Rotary Club was awarded, April 18, to Mother M. Alfonsa Lathrop, founder of the Servants of Relief for Incurable Cancer at Hawthorne, N. Y., and daughter of Nathaniel Hawthorne, the novelist, for "outstanding service to humanity during the last year.——Dr. David Warshaw, Albany, has been appointed chief of clinic and adjunct attending surgeon, surgical outpatient department, Mount Sinai Hospital.

New York City

Society Creates Relief Fund.—The Yorkville Medical Society at its last meeting of the executive officers created a hospital relief fund to aid needy members of the society; a loan of $5,000 through the efforts of Dr. Charles N. Gelber, who is chairman of the committee, was advanced to start the fund.

Chiropodist Fined.—Samuel Marder, said to be a chiropodist, 155 St. Marks Place, Manhattan, was fined $100 in court in Jamaica, recently, it is reported, on a charge of practicing medicine illegally. Marder is said to have attended a person complaining of abdominal distress, and to have sent a bill for attending the patient for a sprained ankle.

New Kind of Clinic.—The James Buchanan Brady Foundation, New York Hospital, announces the establishment this week of a clinic for the nonsurgical treatment of tuberculosis of the urinary tract, which will be, it is said, the first of its kind in the United States. Clinics for adults will be held Tuesday and Friday afternoons, from 2 to 4, and for children, Saturday mornings, from 9 to 10. The Finsen light, the alpine light and tuberculin injections will play an important part in the treatment. Dr. Stanley L. Wang will be in charge of the new clinic under the direction of Dr. Oswald S. Lowsley, head of the Brady Foundation.

Prizes for Manuscripts on Public Health.—The Harmon Foundation offers through the *Survey* prizes of $250, $100 and $50 for the best unpublished manuscripts dealing with some experiment, invention or achievement in the field of public health. The subject must be presented so as to be interesting to lay readers in not less than 1,000 words nor more than 2,500 words, and be typewritten, double-spaced and delivered not later than June 30, to "The Jury, Harmon-Survey Award 3, care of the *Survey*, 112 East Nineteenth Street, New York." There must be a pen name on the manuscript, accompanied by a plain, sealed envelop having on the outside the pen name, and within both the pen name and the real name of the author. Dr. Haven Emerson is chairman of the jury.

Tuberculosis Death Rate Reduced.—There were 5,471 deaths from tuberculosis in the city during 1925, which was 116 fewer than in 1924; of these, 4,775 were of the pulmonary type. A chart published by the New York Tuberculosis and Health Association shows a comparatively high plateau for tuberculosis deaths from 1898 to 1918; there was a decided drop in 1909, another in 1920, and another in 1921; then a much smaller decline down to the present. The number of deaths in the city from all forms of tuberculosis in 1907, for example, was 10,262; in 1918, 10,098; in 1898, 9,265. Almost half of the deaths from pulmonary tuberculosis last year occurred in Manhattan, the oldest and most crowded part of the city. The average death rate from pulmonary tuberculosis for the city as a whole was 81 per hundred thousand; for Manhattan, it was 113 per hundred thousand, an excess of 40 per cent. The death rate in the borough of Brooklyn was 63 per hundred thousand, which was 5 per cent less than it was the year before. There were 10,955 new cases of tuberculosis reported to the department of health in 1925, which, added to those already known, made a total of 27,172 in the city. The registration rate in the city is now 562 per hundred thousand of population, ranging from 698 in Manhattan to 134 in Richmond.

Society News.—Dr. Michael Schuman has been elected president of the Riverside Medical Society, and Dr. Samuel Morse, secretary; Dr. George D. Stewart, who was guest of honor at the last bimonthly scientific meeting and dinner at the Hotel Majestic, delivered an address on "An Eye Witness in the Evolution of Surgery."——Dr. Bernard Sachs addressed the stated meeting of the New York Academy of Medicine, May 6, on "The Mental and Moral Training of the Normal Child."——The Medical Society of the County of Queens and

the Medical Association of the Greater City of New York jointly will visit, June 2, the Carnegie Institute of Washington, Department of Genetics, Cold Spring Harbor, Long Island, and, at the same time, the New York State Fish Hatcheries, and then will dine at Ward's Rest Inn at Center Port.——The Brooklyn Chamber of Commerce and the Medical Society of the County of Kings have approved the formation of a Brooklyn Health Council to coordinate all health agencies, to emphasize preventive medical work and properly to evaluate proposed medical agencies; at the organization meeting of the council, April 28, Mr. Matthew S. Sloan, president of the Brooklyn Edison Company, was elected president, and Dr. John E. Jennings, vice president.——Dr. Edward P. Kolb, superintendent, Suffolk County Tuberculosis Sanatorium, Holtsville, recently delivered a series of three lectures on tuberculosis before the Queens County Medical Society.

OHIO

Health at Cincinnati.—Telegraphic reports to the department of commerce from sixty-eight cities with a total population of about 29,000,000, for the week ending April 10, shows that the highest mortality rate (26.1) appeared for Cincinnati, and that the mortality rate for the group was 17.4. The mortality rate for Cincinnati for the corresponding week last year was 15, and for the group of cities as a whole, 14. There were twenty-four deaths from influenza in Cincinnati during the week of April 10.

Hospital for Wooster College.—An anonymous donor has given $75,000 to Wooster College, Wooster, for the construction of a three story hospital building on the campus, to provide hospital facilities for students who are ill, and to supervise better the general health of the student body. The hospital will be built on Beall Avenue and will be completed by June, 1927. A full-time physician and two nurses will be employed, and funds for the maintenance of the hospital have been provided.

Personal.—Dr. Mont R. Reid, Cincinnati, now temporarily on duty in Peking, China, has been selected to accompany Roy Chapman Andrews on an Asiatic expedition this summer.——Dr. Louis H. Senteff has been appointed superintendent of Mount Logan Sanatorium, Chillicothe, succeeding Dr. James J. Chandler, resigned.——Col. Louis T. Hess, M. C., U. S. Army, addressed the reserve medical officers at a luncheon at the Business Men's Club, Cincinnati, on "Mobilization of Reserve Medical Corps for War." Colonel Hess also visited various hospitals and the Medical College of the University of Cincinnati, and Fort Thomas, Ky., which is on the heights just across the river from Cincinnati.——Dr. Squire S. Beverly has been appointed health commissioner of the city of Toledo, to succeed Dr. Daniel W. Iford.——William H. Dittoe, a sanitary engineer for many years with the state department of health, has resigned to become chief engineer of the Mahoning Valley Sanitary District.——Dr. Horatio Z. Silver, Eaton, has been appointed county physician.——A jubilee was recently held in Cleveland in honor of Dr. Frank E. Bunts, who has been connected with Charity Hospital for about forty years.——Dr. Hermann M. Gunn, Philadelphia, has joined the staff of the New London clinic and hospital.

PENNSYLVANIA

Safety Conference.—The Pennsylvania department of labor and industry of the Commonwealth of Pennsylvania will hold a state-wide safety conference in the House of Representatives at Harrisburg May 28. The program, which has been arranged to stimulate discussion, announces that 247 persons were killed in Pennsylvania in 1925 on construction; 85 by cranes; 99 with electricity; 95 by falling objects and 58 in handling objects, and that 538 eyes were lost. There are 3,400 establishments in the state without any safety organization.

Governor Smith to Speak on State Hospitals.—Governor Alfred E. Smith of New York will address a mass meeting in Philadelphia at the Academy of Music, Monday evening, May 24, under the auspices of the Public Charities Association of Pennsylvania and the Pennsylvania Mental Hygiene Committee. The meeting will be in the interest of a $50,000,000 bond issue for a ten year building program for state hospitals for the insane, feebleminded and for correctional institutions. Governor Smith will give an account of work done in New York to improve the state hospitals. Senator Reed of Pittsburgh will preside at the meeting; the other speaker will be Dr. Horace P. Pike, director, clinical psychiatry, Danville State Hospital.

Society News.—Dr. Walter Timme, clinical professor of neurology, Columbia University College of Physicians and Surgeons, New York, delivered the Emmerling Memorial Lecture before the Pittsburgh Academy of Medicine, April 29, on "The Nature, Character and Treatment of Pituitary Migraine."——Dr. Arthur C. Morgan, Philadelphia, addressed the Harrisburg Academy of Medicine, April 30, on "The Treatment of Acute Cardiac Tragedies."——Dr. James J. Walsh, New York, gave the annual Campbell lecture of the Fayette County Medical Society, Uniontown, April 20, on "Funny Things That Have Cured People," which is said to be a denunciation of medical quackery. The annual Campbell lecture of the Fayette County Medical Society was established in honor of Dr. Hugh Campbell, the first graduate physician to practice medicine in the county.——Dr. John D. McLean, Philadelphia, addressed the ninth annual Child Helping Conference for Schuylkill County, Pottsville, April 20, on "Hearts Damaged in Childhood."

Philadelphia

Hospital News.—The president, managers and contributors to the Pennsylvania Hospital in West Philadelphia have issued invitations for May 26 to a celebration of the one hundred and seventy-fifth anniversary of the foundation of the hospital.

Endowment Subscribed.—May 1 marked the close of the first year of the fifteen year drive of the University of Pennsylvania for an endowment fund of $45,650,000, with the result that the subscriptions amounted to $7,500,000; subscriptions were received during the year from 10,868 persons, of whom 10,467 were former graduates or students.

Personal.—Dr. Samuel A. Lowenberg has been appointed visiting physician to the Philadelphia General Hospital and to the Northern Liberties Hospital.——Elmer V. McCollum, Ph.D., of Johns Hopkins University, Baltimore, addressed the Philadelphia Home Economics Association at Conwell Hall, April 15, on "Dietary Reforms."——Dr. John Norman Henry has been nominated for a trusteeship in the University of Pennsylvania.

WEST VIRGINIA

State Medical Meeting.—The fifty-ninth annual meeting of the West Virginia State Medical Association will be at Morgantown, May 25-27; the association will be guests of the Monongalia County Medical Society. The council and the house of delegates will hold preliminary meetings, Monday, May 24, at the Hotel Morgan; the meetings of the association will be at the Elks Club. There will be a conference of secretaries of component societies, Tuesday noon, to discuss organization activities.

CUBA

Society for Study of Mental Diseases.—The Society of Psychiatry and Neurology of Havana, which was recently organized, has held its first meeting; other meetings will be held monthly. Dr. Armando de Cordoba was elected president of the society and Dr. Aristides Mestre, director of publications.

Milk Dispensary for Children.—Under the auspices of the Red Cross and financed by El Club Femenino de Cuba, a milk dispensary has been opened in Havana, which has about thirty children under its care. A pediatrician makes a complete physical examination of each patient and then prescribes a diet, which with the medical treatment is given to the children free. The mothers are trained in hygiene and other subjects related to health. It is the hope of the health authorities that, through the work done in this dispensary, other localities will establish similar institutions.

GENERAL

Award of Priestley Medal.—The American Chemical Society will award the second Priestley Medal to Dr. Edgar F. Smith, emeritus professor of chemistry, University of Pennsylvania, at the Philadelphia meeting of the society in the fall. The medal is bestowed every three years. The first Priestley medalist of chemistry was Ira Remsen, former president and professor of chemistry, Johns Hopkins University, Baltimore.

Found at Dallas.—Dr. Samuel Iglauer, Pearl Market Bank Building, Cincinnati, writes that he found a pair of glasses, with gray frame, in a gray, soft leather case, and that he is holding them for the owner.——A leather key holder containing six flat kays may be obtained from Association Headquarters, 535 North Dearborn Street, Chicago. Refer inquiries to "Lost and Found."

American Board of Ophthalmic Examinations.—The next examination of the American Board of Ophthalmic Examinations will be held in Denver, September 13, just before the meeting of the Academy of Ophthalmology and Otolaryngology, which convenes in Colorado Springs, September 14. Further information can be obtained from the secretary of the board, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

Fellowships in Neuropsychiatry.—The Graduate School of Medicine of the University of Pennsylvania, in cooperation with the Commonwealth Fund of New York, offers four fellowships in neuropsychiatry with especial reference to child guidance. These fellowships, which are at a stipend of from $2,000 to $2,600 per annum, begin, Oct. 11, 1926, and continue for a period of three years. Applications should be addressed immediately to Dr. George H. Meeker, Dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia.

Annual Conference of Health Officers.—The annual conference of state and territorial health officers with the U. S. Public Health Service will be held in Washington, May 24-25. Representatives are expected from every state and territory. Among the subjects to be considered will be the status of sickness and morbidity reports and registration; the merits of a certification system in the sanitary control of shell-fish; the status of smallpox in the United States, and measures for its control. The conference will also discuss the distribution of ethyl gasoline, vaccination of dogs against rabies, and other phases of public health work.

Society News.—The fifth regular session of the International Association for the Promotion of Child Welfare will be held in Rome, May 25-29.——The annual meeting of the American Psychiatric Association will be held in New York, June 8-11, at the Waldorf-Astoria Hotel; final arrangements have been made for the entertainment of the visiting physicians and their wives and guests of the association.——At the annual meeting of the Association of American Physicians, Atlantic City, May 4-5, Dr. Charles F. Hoover, Cleveland, was elected president; Dr. Alfred S. Warthin, Ann Arbor, Mich., vice president; Dr. Francis W. Peabody, Boston, secretary, and Dr. Joseph A. Capps, Chicago, treasurer.

International Organization for Standardization.—The American Engineering Standards Committee called a conference in New York in April at which the national standardizing bodies in eighteen countries were officially represented. The conference drew up a proposed constitution for a new organization to be called the "International Standardization Association," whose object will be to arrange for international agreement on standardization by providing simple systematic means of interchanging information on standardization work; to develop general principles for the assistance of the national standardizing bodies, and to promote uniformity among the standards of the various national bodies. Members of the association are to be the central national standardizing bodies in the countries that accept this constitution. The executive body will be the "plenary assembly," composed of delegates of all the national standardizing bodies; an administrative council will control the finances and administrative matters but will have only advisory powers on important questions. Thus the basis of an international organization for industrial standardization has been made. The location of the seat of the new organization will be determined by the first plenary assembly. The conference recommended that the offices be established in London.

Supreme Court to Decide Pint in Ten Days Limit.—The right of the federal government to limit the quantity of alcoholic liquor a physician may prescribe within a given period is to be decided soon by the U. S. supreme court. The case, which was argued before the court, April 30, originated in a suit filed in 1922 in the U. S. district court of the southern district of New York by Dr. Samuel W. Lambert, with the approval of the Association for the Protection of Constitutional Rights, of which he was then president. Dr. Lambert sought an injunction to restrain the commissioner of internal revenue from enforcing those provisions of the National Prohibition Act limiting the quantity of liquor a physician may prescribe for one patient within a ten-day period. The district court granted the injunction. On appeal by the government, the circuit court of appeals for the second circuit reversed the lower court. Thereupon Dr. Lambert appealed to the U. S. supreme court. Because of the importance of the case, the American Medical Association and the general counsel for the Anti-Saloon League were allowed to file briefs as amici curiae. The closeness of the question is shown by the fact that the district court for the northern district of Ohio and the circuit court of appeals for the second circuit have decided in favor of the government, while the district court for the district of Montana and the district court for the southern district of New York have held that the limitations imposed by Congress exceed its power under the eighteen amendment.

Appointment of Fellows in Medicine.—The Medical Fellowship Board of the National Research Council appointed the following fellows in medicine, April 24:

Name	Field	Location
Dr. Harold A. Abramson, Libman Fellow, University of London	Physiology or medicine	A. V. Hill, London
Dr. Martin H. Dawson, University Clinic, Royal Victoria Hospital, Montreal	Medicine.....	Rufus Cole or F. W. Peabody, Harvard University
Dr. Arthur R. Elvidge, Cooper research scholar, McGill University	Physiology.....	Erlanger, Wiggers or Carlson
Dr. Peter Heinbecker, house surgeon, Presbyterian Hospital, New York	Physiology, surgery.	Gesell or Erlanger
Dr. Francis Heyroth, Seeley Fellow, University of Cincinnati	Biochemistry.....	E. J. Cohn, Harvard University
Dr. Charles G. Johnston, student assistant in surgery, Washington University	Biochemistry.....	H. B. Lewis, Michigan, or D. W. Wilson, Pa.
Dr. Florence M. Macdonald, assistant in pathology, Johns Hopkins University	Neuropathology, neuro-anatomy	Huber, Michigan, or Herrick, Chicago
Dr. Jacob Markowitz, demonstrator in physiology, Toronto	Physiology.....	E. K. Marshall, or Erlanger and Gasser
Dr. Walter S. McClellan, resident physician, Bellevue Hospital, New York	Physiology.....	Lusk, Cornell
Dr. Hobart A. Reimann, assistant resident physician, Rockefeller Institute, New York	Pathology.....	Anton Ghon, Prague
Dr. Ralph G. Smith, intern, Toronto General Hospital	Pharmacology.....	Sollmann or Gasser
Dr. Maurice L. Tainter, instructor in pharmacology, Stanford University	Pharmacology	
Dr. Willard O. Thompson, research fellow in medicine, Harvard University	Biochemistry.....	L. J. Henderson, Harvard Univ.
Dr. Thomas E. Wood, instructor in medicine, University of Virginia	Physiology.....	Sir Thomas Lewis, London
Howard J. Shaughnessy, Ph.D., instructor in public health, Yale University	Bacteriology.....	Jordan, Chicago
William L. Straus, Ph.D., student at Johns Hopkins University	Anatomy	

CANADA

Personal.—Prof. C. L. Starr, University of Toronto Medical School, recently returned from Harvard University Medical School, Boston, where he assumed the chair of surgery for four weeks during the absence of Professor Cushing in Europe.——Dean Primrose, University of Toronto Medical School, has been awarded an honorary LL.D. by the University of Edinburgh.

Hospital News.—The Soldier's Memorial Hospital at Tillsonburg, Ont., which was made possible by the bequest of the late John Smith, was opened, March 22, by the minister of agriculture of Ontario in the presence of an audience which more than filled the building.——An addition to St. Joseph's Hospital, Winnipeg, will be started shortly, and, when completed, will make the total capacity 200 beds.

Society News.—The Canadian Society for the Study of Diseases of Children will hold its annual meeting at Gananoque, Ont., June 11-12, and all scientific meetings will be open to visitors. Further information may be obtained from the secretary-treasurer, Dr. Henry P. Wright, 40 Trafalgar Avenue, Montreal.——The fifteenth annual meeting of the Canadian Public Health Association, the twelfth annual meeting of the Ontario Health Officers' Association and the sixth annual meeting of the Canadian Social Hygiene Council were held at the University of Toronto, Toronto, May 5-7. There was a program of antenatal clinics, child hygiene clinics, nutrition clinics, demonstrations of public health nursing and milk and food control, and visits to the sewage disposal plants, the Connaught laboratories and other places; in addition to prominent Canadian health officials, George E. Vincent, president, Rockefeller Foundation; Dr. Haven Emerson, professor of public health administration, Columbia University, and Prof. Charles Edward A. Winslow, president, American Public Health Association, and professor of public health, Yale University, New Haven, Conn., addressed the convention.——At the twenty-eighth annual meeting of the

Vancouver Medical Association April 29, Archibald W. Hunter was elected president; Dr. Austin B. Schinbein, vice president; Dr. F. W. Brydone-Jack, secretary, and Dr. Walter S. Turnbull, treasurer.——Dr. Hibbert W. Hill, director, Vancouver General Hospital Laboratories, and professor and head of the department of bacteriology, University of British Columbia, addressed the Oregon State Health Officers' Convention, March 31, and the Oregon State Medical Association, April 1, at Portland, on "The Nonrelation of Malnutrition to Infection."

LATIN AMERICA

Training of Specialists in Hygiene in Uruguay.—The *Anales de la Facultad de Medicina*, Montevideo, gives the text of the recent law founding the Instituto de Higiene Experimental and providing for training of specialists in hygiene. The institute is to have four departments, bacteriology, parasitology, serums and vaccines, and the director is to be appointed by the medical faculty of the university, to serve five years.

Oil Company Opens Hospital.—The Venezuela Gulf Oil Company dedicated a new hospital at Bella-Vista, February 27. The hospital has a capacity of thirty beds and is completely equipped to meet the requirements of the company in this region. It will receive, however, employees of other oil companies and private patients also. The present staff comprises, among various other assistants, three American physicians and three American nurses. Dr. L. G. Chacín Itriago, chief of the National Health Service of Venezuela, was the principal speaker at the ceremonies.

Personal.—There are two physicians in the cabinet of Ecuador, namely, Dr. Isidro Ayora, professor of midwifery in the University of Quito, and Dr. A. Hidalgo Nevares, professor of physiology in the University of Guayaquil, who are respectively minister of public welfare and of public instruction.——Dr. G. Aráoz Alfaro has been made an officer of the French Légion d'honneur.——Dr. R. Finocchietto, Buenos Aires, has been delegated to study rehabilitation centers in other countries, as it is planned to open three at Buenos Aires to aid the crippled to become self-supporting.

FOREIGN

Vaccination Against Tuberculosis at Vienna.—The *Wiener klinische Wochenschrift* states that wholesale vaccination of school children against tuberculosis has been undertaken at Vienna. There have been no mishaps so far, but the reports have not yet been received from all the schools.

Graduate Course on Cancer.—Professor Gunsett writes to announce a course of laboratory and clinical study of cancer at Strasbourg, Oct. 8 to Nov. 6, 1926. Ten members of the faculty and visiting specialists will lecture, and Senator P. Strauss, former chief of the public health service, will preside. Dr. Gunsett is director of the regional cancer research center. The detailed program will be sent on request.

Prize for Research in Obstetrics.—The British Medical Association has received a gift of £1,000 from Dr. Katherine Harman, wife of the treasurer of the association, to establish a prize for research in problems incidental to child-bearing. Dr. Harman suggests that the prize be offered once in two years for the best work on any subject chosen by the council which comes within the definition of "disorders incident to maternity," or secondly, in recognition of important work already done on researches instituted that promise good results.

Personal.—The Ramaer medal, awarded for work that during the last five years has contributed most to the progress of neurology and psychiatry in the Netherlands, is to be conferred on Dr. A. de Kleijn, Utrecht, for his pioneer research on the physiology of the otolith apparatus, the static sense, tonic reflexes, etc.——Dr. J. Mijnlieff, Amsterdam, Keizergracht 134, is the secretary for the third International Congress on Rescue Work and First Aid, which meets at Amsterdam, Sept. 7-11, 1926.——Prof. W. Körte presided at the recent fiftieth anniversary celebration of the German Surgical Society; the city of Berlin presented 10,000 marks to the Körte foundation and a souvenir plaque.——The *Deutsche medizinische Wochenschrift* states that Dr. Fischer of the Pathology Institute at Copenhagen has been called to the Kaiser Wilhelm Institut für experimentelle Therapie, Berlin, for a term of three years as a "scientific guest."——The *Presse médicale* mentions that Prof. F. de Lapersonne, Paris, has received a parchment address from the Mexican Ophthalmologic Society expressing gratitude for the devoted care lavished on Prof. R. Silva during the latter's long, grave illness in France last year.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 24, 1926.

Physician's Action Against a Hospital for Roentgen-Ray Injury

An unusual action has been heard at the eastern districts local division in the supreme court of South Africa. Dr. Bryne sued for $40,000 damages for a roentgen-ray burn of the left hand, which had left him to a large extent incapacitated for work. It was alleged that this injury was due to the neglect of the East London hospital board to provide proper apparatus with adequate safeguards, or in consequence of Dr. Hollis, then resident medical officer, who was in charge of that apparatus, not being an expert in roentgen-ray work. The injury was incurred during the course of an operation which the plaintiff was performing for the removal of a needle from the hand of a woman (who also sustained a burn). The defendants denied both that the apparatus was defective and that Dr. Hollis was inexpert in its use, and it maintained generally that, even if he were, the board was not legally responsible for his defects. The plaintiff could see the foreign body, but could not remove it. The body broke into three portions and he extracted only two pieces. When Dr. Hollis found that the plaintiff was failing to find the third portion of the needle, he asked to be allowed to attempt it, which he did. The operation lasted an hour and a half, and seven or eight exposures were given, using 10 milliamperes of current. A week later it was discovered that the plaintiff, the patient and the nurse, all of whom had been under the roentgen rays during the operation, had been seriously burned. The plaintiff relied on the breach of duty of the defendant board in failing to employ a person expert in the use of the roentgen-ray apparatus provided by the board. The defendant board admitted the duty to provide a resident medical officer, who, after due inquiry, might reasonably be deemed to be competent to manage such apparatus, and said that Dr. Hollis after due inquiry was reasonably deemed to be competent. It did not admit that Dr. Hollis was as a fact incompetent or that the plaintiff's injuries were due to inexpertness. The board denied that it was aware of any knowledge of inexpertness of Dr. Hollis, or that it was negligent in any way in appointing or employing him, and that even if Dr. Hollis was negligent or inexpert, and the board was negligent in employing him, the plaintiff was contributorily negligent and could not recover damages because: (*a*) the plaintiff, with full knowledge of the apparatus and of its effects, knowingly overexposed himself to the rays for an unduly long period; (*b*) he permitted Dr. Hollis to leave his duties as roentgen-ray operator and to act as the anesthetist, and for a prolonged period to explore for the portion of the needle; (*c*) he aggravated his injury by using his injured hand too soon after the burn and by employing unsuitable treatment. Sir T. Graham, the presiding judge, said that he was not satisfied that Dr. Hollis was a highly skilled radiologist, but he was convinced that at this date the defendant board had every reason to suppose that it had procured in him a competent and zealous radiologist. This being so, whatever action the plaintiff may have against Dr. Hollis, he must fail in his action against the defendant board. He gave judgment for the defendant with costs. Mr. Justice Pittman delivered a lengthy judgment concurring in the finding for defendant with costs, but basing his finding on his opinion that Dr. Hollis was competent at the time material, which, of course, removed from consideration the question as to whether the defendant board was negligent in engaging and employing him.

Statistics of Crime

The statistics of crime for England and Wales for 1924, just issued, contain much of medical interest. The figures of persons tried for indictable offenses are considered to be the best index to the annual fluctuations of crime. The number of persons tried for indictable offenses in 1924 was 57,374. In 1913, the last complete year before the outbreak of war, the number was 63,269, and the quinquennial averages for the preceding twenty years were successively 53,174, 53,833, 60,065 and 66,301. Measured by these figures, crime was increasing before the war, was less after peace, and now does not yet show a tendency to increase or decrease. With regard to murder, for the last fifty years, during which the population has increased from 24 millions to 39 millions, the number of murders in each year has remained almost stationary at about 150 cases per annum, of which for many years past about fifty have been murders of infants aged 1 year and under. In each of the last two years, 1923 and 1924, the total number of murders has been exactly 150, which is equivalent to 3.9 per million of the population. In 1924, fourteen persons were sentenced to death for murder, and in the cases of ten persons the sentences were executed. The figures of murders committed in England and Wales are not comparable with the figures for foreign countries because of differences in the definitions of murder. If, however, the total number of all homicides in certain countries is taken, approximately accurate comparisons can be made. In 1924 the number of homicides in England and Wales (including murder, manslaughter and infanticide) was 274, and the annual average for the five years from 1920 to 1924 was 268. The estimated total population of England and Wales in 1924 was 38,746,020. In the United States, in the registration area inhabited by 93,000,000 people out of the total of 110,000,000 population of the whole continental area of the United States, there were 7,788 homicides in 1922, of which 5,714 were committed with firearms. In Germany in 1921 there were 167 persons sentenced to death for murder; in Italy in 1918, with a population of 36,557,615, there were 1,983 homicides (including attempts) actually denounced to the courts (in England and Wales the corresponding figures for 1918 for such crimes known to the police were 267); and in France in 1913 there were 855 persons tried for homicide. In recent years there has been a slight increase in the figures of sexual crimes in England and Wales. The annual average of the total of this group during the five years 1919 to 1923 was 2,937; the actual total for 1923 was 3,030, and for 1924 it was 3,160. The increase was mainly in indecent assaults on young persons under 16.

Severe Sentence on a Physician for Supplying Morphine Contrary to Regulations

In a previous letter, a case was reported in which a physician was fined for supplying morphine contrary to regulations. In the following case the sentence was much more severe. A physician was summoned under the dangerous drugs act of 1920 for failing on three occasions to enter in a register kept for the sole purpose a certain quantity—50 grains—of morphine purchased by him. There was also a fourth summons for failing in a prescription for morphine to specify the address of the person for whom the prescription was given. He was seen by an inspector with reference to a woman, a drug addict, who had been convicted of forging a prescription. He was found to have been sending her morphine to Glasgow from London. He was informed that she was being treated by another physician, and said he would discontinue treating her. In December, 1925, the woman was again interviewed in Glasgow by a representative of the home office, and from information received, the inspector again went to see the physician. He told him he wanted to inspect his register. The physician said he did not keep a register, and he did not keep any stock of drugs or do any dispensing. If patients wanted any morphine he prescribed for them. That was not true. A day book showed that between January and December, 1925, the physician had prescribed 575 grains of morphine on thirteen occasions, and had seen the woman only six times. The pharmacist's register showed only the prescription made out in the name of the woman, but there were a number of "orders" signed by the physician and headed "For surgery use only," amounting in all to 850 grains. The magistrate said he would like to know whether the persons to whom the physician was alleged to have supplied morphine were drug addicts, or if they had come to any disaster as a result, and was informed that as far as one person was concerned this was so. It was stated by the police that the physician was a specialist in drug cases, and a large number of addicts known to the police were treated by him. The magistrate said that it was necessary in the interests of the public that, when a physician broke the rules and regulations as to the supply of dangerous drugs, he should be severely dealt with. He would sentence the defendant to two months' imprisonment in the second division on each of the first three summonses, and fine him $250 also on each of the three summonses, and a further $250 on the fourth summons, making in all six months' imprisonment and $1,000 fines. Notice of appeal was given.

A Surgeon's Hand

At a meeting of the Liverpool Medical Institution a remarkable and probably unique ceremony took place—the presentation to the institution of a bronze cast of the right hand of the surgeon F. T. Paul. In making the presentation, Mr. Frank Jeans said that the name of Paul was known to every surgeon in the civilized world and would be known 200 years hence—not only because he invented "Paul's tube" but also because he was responsible for much of the progress of surgery made in the past. This hand had been done in bronze from a plaster cast by H. Tyson Smith, the sculptor. It was a remarkable hand, the hand of a man who had worked. It was very like the hand of a cellist or a violinist because it was short and broad. The President called on Mr. Paul, who was present. He had been fond of using his hands from his earliest years, he said, as such use is the only way of training them in delicacy; at the same time, it must be remembered that a gentle touch came from the heart rather than from the hands—a touch inspired by a true sympathy with the patient's tissue.

BELGIUM

(From Our Regular Correspondent)

April 1, 1926.

The Cancer Problem and the Progress of Radium Therapy

Prof. C. Regaud recently gave before the Institut des hautes études in Brussels a series of lectures in which he gave a comprehensive account of radium therapy. The statement that dosage may be computed as the product of the intensity of the application and the time during which it is applied is not entirely accurate. A considerable quantity of radium, if allowed to remain for a few hours within the testis of a sheep, may produce an area of necrosis but only partial sterilization. On the other hand, a much smaller quantity of radium left for a sufficiently long period may produce complete sterilization without necrosis. The time element is of paramount importance. This must be taken account of in clinical therapeutics. The sensibility of tumors to ray therapy, unfortunately, diminishes with successive doses. An endeavor should be made to develop artificial radium sensibility; for example, through diathermy or through introduction into the tumor of substances of

high atomic weight in the form of minute particles. There is a great future for the collaboration of chemotherapy and ray therapy. The author hopes for more general use of selective ray therapy in place of caustic ray therapy. All cutaneous epitheliomas yield solely to ray therapy and should no longer be operated on. In new cases, a cure can practically always be effected. Permanent cures are obtained in 50 per cent of cancers of the tongue, and 25 per cent of cancers of the buccal floor. Cancer of the pharynx gives 35 per cent of cures when ray therapy is applied. In cancer of the larynx, the prognosis is less favorable, because the cartilages, rich in lime salts, cause harmful secondary irradiation. Escat's plan of resecting the cartilages before undertaking irradiation looks as if it ought to give good results. Cancer of the esophagus does not give good results, owing to the thinness of the walls and the position of the mediastinum. In cancer of the cervix uteri, surgery and radium therapy are equally promising in favorable cases; but it looks as if the knife would be entirely replaced by radium before long. In inoperable cases, radium properly used gives from 15 to 25 per cent of cures extending over periods of five years or more. Although cancer of the breast is very sensitive to rays, the results are mediocre, because it proliferates early. In cancer of the digestive tract, with the exception of the rectum, progress is minimal, though noteworthy results may be hoped for.

Vaccination Against Smallpox

Addressing the Société médico-chirurgicale of Brabant recently, Dr. Lust proposed a resolution to be sent to the minister of public health demanding that the lower house should pass a law making vaccination and revaccination obligatory. Two neighboring countries, England and the German cantons of Switzerland, have experienced an extensive epidemic of smallpox as the result of the abolition of compulsory vaccination. A certificate of vaccination should be required of every foreigner wishing to reside in Belgium.

Surgical Treatment of Vertigo

Dr. Hautant emphasized recently the good results secured from surgical intervention in certain cases of vertigo; more particularly, neuralgia of the vestibule, an affection occurring in persons around 50 years of age, accompanied often by progressive loss of hearing. The intervention consists of a trephining operation on the labyrinth, its extent varying with the degree of conservation of the hearing. The operative results are excellent; mortality nil; no postoperative suppuration, and no involvement of the facial nerve. The feeling of dizziness disappears, and almost always the hearing improves.

Noncancerigenic Tar

Before the Société belge de biologie, Maisin, Rome and Jacquemin announced that they have discovered that tar produced in the Fisher rotary ovens at a low temperature (from 450 to 500 C.) is not cancerigenic. Various components of this tar (rosin, heavy oils and light oils) were also found to be noncancerigenic.

Medical Examination and License to Wed

In an address before the Société belge d'hygiène, Professor Brachet expressed himself in favor of medical examination of candidates to wed. He does not, however, deny that there are difficulties to be overcome before compulsory examination can become a reality. He pointed out the abyss that separates genetics, or the science of animal and vegetable crossings, from eugenics, the science of human crossings.

Every person living is the result of a multitude of crossings. There does not exist in man any such thing as pure lineage, which is in experimental genetics the first and fundamental condition demanded. The object of eugenics is to develop in the offspring the most useful qualities that man can possess. Many marriages take place which, from the eugenic standpoint, ought never to be consummated; for example, between members of two families that betray marked like defects, though they may give evidence of possessing at the same time very desirable talents, which might result in the birth of a genius. The question, therefore, arises, Is it better for the state to put obstacles in the way of the consummation of a union from which a genius might be born or to run the risk of expending thousands of dollars for the hospitalization of the defective offspring of defective parents?

The trend of the arguments places the whole question on this basis: It does not seem advisable to prevent unsuitable marriages by law, but it would seem well to launch an intensive publicity campaign in which sound logic and good example are the rallying notes. It might be feasible to establish a free service where candidates for marriage could receive prenuptial medical advice, as has been recommended by M. Govaerts.

GENEVA

(From Our Regular Correspondent)

April 20, 1926.

Title of Specialist

Following a recent decision, the title of specialist cannot be used in Hungary until a physician has devoted himself to special study for a given length of time. Physicians who illegally call themselves specialists are subject to a fine. In Germany also the diet has decided that the title of specialist can be granted only by a commission of seven members designated by the council of the medical chamber.

Death of Dr. Maygries

Widespread regret has followed the announcement of the death of Dr. Maygries, agrégé professor of the Paris Faculty and obstetrician to the hospitals of Paris. Overtaken by poverty-stricken old age, this eminent practitioner sought refuge in an establishment of the public charities, where he died. He had delivered 10,000 French children during his long career.

Imagination in Therapeutics

Dr. Gustave Monod of Vichy recently delivered a lecture to the Medical Society of Geneva, entitled "Imagination in Therapeutics; Cagliostro to Coué." Cagliostro, Gruty and Coué, by different methods, having an identical mechanism, effected cures of psychasthenics. These three healers obtained success in foreign lands, never in their own; Cagliostro and Gruty in France, Coué in England and the United States. In Italy, Coué was a complete failure. The medical profession should never despise a therapeutic procedure. Coué has shown that an estimate of the suggestibility of every patient should be made. One patient needs authority, another needs persuasion, and all need sympathy. We are not to imitate the procedures of Coué and other healers, but their effectiveness resides in the fact that they are always themselves. In the development of our personalities, Monod sees the possibility of becoming the best of healers.

International Medical Union

The Central Committee of the Federation of Swiss Physicians has ratified its adhesion to the International Medical Union and will be represented in that body by its president, Dr. Fingerhuth. The union is intended to be a center of information whose permanent agent is to be a general secretary. The council of the union will be composed of two members and a correspondent for each nation belonging to the union. As an example of the work of the

union, let us suppose that Finland wants to know how a given medicosocial question has been settled by the medical profession of Switzerland and Italy. Finland's correspondent writes to the general secretary, and the latter transmits his questions to Switzerland and Italy. Copies of the replies are kept by the secretariat, so that little by little its archives will become an international library concerning the practice of medicine.

Importance of Acne

Prof. Charles Du Bois of Geneva has recently called attention to the fact that acne in young persons should be carefully treated because it disfigures adolescents for years and, by leaving cicatrices in adults, may become the starting points of epithelial growths in later life. Prophylaxis requires minute cutaneous hygiene and regular removal of comedones by means of Unna's instrument or pressure with the fingers, care being taken to avoid making any excoriation liable to become infected. Before and after these manipulations, the skin is to be impregnated with a fat dissolving solution, the following being Du Bois' choice: benzine, purified petroleum benzin and xylene, equal parts. This solution causes swelling and irritation of the skin, which is always temporary and without danger.

Arsenic on Apples

On account of the recent legal proceedings in England relating to American apples bearing arsenic, it is likely that a law controlling its use in fruit growing will be submitted to the Swiss federal council for action.

Gastro-Intestinal Hemorrhage of the New-Born

Dr. Salavert records three cases of nurslings who developed melena and hematemesis a few hours after birth. Other methods of treatment have been outclassed by transfusion. Citrated blood, as used by Lewisohn in 1914, was perfected by Helmholz in 1915, the transfusion being made in the superior longitudinal sinus. Statistics show that the hemorrhage was controlled in 96 per cent of the cases, with 89 per cent recoveries, even in the most desperate cases. It is preferable to determine the blood group of the donor and infant, yet no time is to be lost with this examination because several hundred transfusions have shown that the mother's blood can almost always be transfused with impunity.

ITALY

(From Our Regular Correspondent)

March 15, 1926.

The Leonardo Bianchi Foundation

In recognition of the work of Prof. Leonardo Bianchi, senator, as instructor in neurology and psychiatry, a fund has been collected with which to establish at the University of Naples a biennial Bianchi prize, to be awarded to the medical graduate who submits the best work on neuropsychology.

The Crusade Against Malaria

The municipality of Rome and the Rockefeller Foundation will cooperate in creating in Rome an institute for the study of malaria in Italy, and particularly in the Agro Romano. The institute will be housed in the Palazzo della Farnesina, and will comprise a department for biologic study, an exhibit of sanitary engineering, a library with modern literature on malaria, and a propaganda department for the demonstration of various systems and installations employed in the crusade against malaria. The governor of Rome has arranged with lessees and owners of land in the Agro Romano to undertake the permanent elimination of stagnant pools. Reservoirs of water must be rendered harmless, bunkhouses of agricultural laborers must be whitewashed, and mosquitoes and other insects which breed must be destroyed. Proprietors and managers of country estates must report all cases of malaria, whereupon the governor of Rome will provide the needed treatment free of charge.

Italian League for the Prevention of Nervous and Mental Disease

The Lega italiana per la prevenzione delle malattie nervose e mentali has been founded in Rome. Its purpose is analogous to that of similar leagues already established in the larger countries of Europe and America. Honorary chairmen are: Prof. Leonardo Bianchi, senator, and Professors Morselli and Tanzi; active chairmen are: Professors Ettore Levi, Ferrari and Medea. The following chapters have already been organized and have begun work: Lombardy (Prof. Medea), Piedmont (Prof. Lugaro), Liguria (Prof. Vidoni), Emilia (Prof. Ferrari), Marches (Prof. Modena), and Abruzzi (Prof. Del Greco). At Rome, a Latium chapter has been established which is housed in the Istituto italiano di igiene e previdenza sociale, under the chairmanship of Prof. De Santis of the University of Rome.

The Death of General Lorenzo Bonomo

The death is announced in Bari, his native city, at the age of 69, of Prof. Lorenzo Bonomo, general in the reserves of the army medical corps. Bonomo had held for ten years the chair of war surgery and operative medicine in the Scuola di sanità militare and had been successively director of various hospitals in time of peace. During the war, he was sanitary director of the army medical corps and later of the third army corps, a post which brought him promotion to the rank of general. He was consultant and chairman of the international sanitary commission, instructor in the Università castrense di S. Giorgio di Nogaro, was appointed chief inspector of the Sanità militare italiana, and was the last person to hold that post, it being now abolished. At his request, he was given a position with the reserves, and was then again called into active service in the ministry of finance, being appointed chairman of the Commissione superiore di visite in connection with the administration of war pensions.

Scientific Lectures at the Scuola di Sanità Militare

In the Scuola di sanità militare, a series of lectures on live topics will be given during the current year, by professors of the various Italian universities. Two lectures have already been given.

The Superabundance of Physicians

Italy has rather an overabundance of physicians. During the war and the years immediately following, the annual number of graduates in medicine and surgery was much greater than during the preceding period, so that now, in the urban centers, there are about 800 inhabitants to one physician.

A New Course in Legal Medicine

At the University of Naples a new course in legal medicine dealing with work in prisons has been organized. Professor De Crecchio, director of the Manicomio Giudiziario in Naples, will have charge of the course. In his introductory lecture, Professor De Crecchio emphasized the need of far-reaching reforms in punitive law. The speaker brought out that the old conception of the prison physician's duties was no longer tenable, and that he must now take his part in corrective work. Professor De Crecchio accentuated the importance to the prison medical specialist of traumatology, aphrodisiology and toxicology. He stated that the prison constituted a veritable psychopathologic clinic, rich in material bearing on the administration of justice and the complex personality of the criminal.

BERLIN

(From Our Regular Correspondent)

April 3, 1926.

Official Consultation Centers on Marriage

In a decree dated February 19, the Prussian minister of public welfare recommended the creation of marriage consultation centers (*Eheberatungsstellen*). The purpose of these centers will be to determine by medical examination whether the health of applicants justifies marriage. The results of examinations will be recorded in a marriage testimonial (*Heiratszeugnis*). The present decree does not propose to make the medical examination compulsory, nor are there any medical restrictions on marriage or any requirement that certificates of health shall be exchanged between the parties to the contract. The consultation centers will serve to establish suitability for marriage and to give advice on medical matters pertaining to marriage but not on other questions bearing on sexual relations. Professional secrecy is imposed on the examiners. The examination will be conducted according to the rules proposed by Hirsch to the Prussian Health Council. The form for the marriage testimonial was also prepared by Hirsch. It comprises the following four questions: 1. What objections, if any, are there to the marriage of the examinee? 2. What dangers, if any, are presented for the other party to the contract? 3. What dangers, if any, would eventual offspring incur from the marriage? 4. What defects, if any, does the other party to the contract present that appear to constitute an objection to the marriage? Hirsch emphasized the dangers of child bearing for women of inferior constitution, and pointed out the dangers from venereal diseases, especially for women. He explained also the risks that posterity incurred. The marriage testimonial requires also replies to the following two quesions: 1. On the basis of the findings made, are there any serious objections to the applicant entering into the marriage relation? 2. Should the applicant postpone his (or her) marriage, and, if so, for how long? It is left to the discretion of the applicants to take whatever course they choose after the contents of the marriage testimonials become known to them. Hirsch discussed the question of whether the marriage testimonials should be made out by the "*Amtsarzt*," by a special adviser (which would require the creation of a new office), or by general practitioners. The decree recommends the appointment, as special advisers, of physicians who are mature, experienced and possessed of broad scientific knowledge. Hirsch thinks that the decision as to the suitability of applicants for marriage licenses should be left to general practitioners. He is fully aware that, at present, the average physician does not possess the adequate knowledge for the task, and repeats his former demands that in the university medical course the theories regarding propagation, the physiology, pathology and sociology of marriage, and the clinical problems of heredity be taught in the medical clinics.

The Operation of the New Law Pertaining to the Care of Cripples

During the years from 1920 to 1924, the Prussian welfare leagues, exclusive of Schleswig-Holstein and Nassau, have turned over 18,600 cripples to institutional care. On the basis of the census of 1906, which gave as 29,000 the number of cripples in Prussia in need of homes, nearly two thirds of that number had been provided for, although Prussia's new law pertaining to the care of cripples has been in operation only five years. To be sure, the undernutrition of the war and postwar periods has produced a large number of new cripples. Up to 1925, the provinces of Prussia expended 6,500,000 marks in the application of the law. According to the law, the task of preventing crippling is part of the public welfare work. The Rhine Province has appropriated 100,000 marks for purposes of prophylaxis. This sum is to be used for the creation of orthopedic courses in gymnastics; for combating rickets, and, finally, for the industrial education of cripples. There is still a dearth of trained orthopedic physicians. Until the universities can supply this need, several communities should combine and employ a specially trained physician.

JAPAN

(From Our Regular Correspondent)

April 6, 1926.

The Cause of Rabies

Dr. K. Sukegawa, after seven years of research, has cultivated the micro-organism that causes rabies. He believes that the Negri bodies are not the cause of this disease. In his first trial of infecting rabbits with this virus, fifty-eight days passed before rabies appeared in them and the symptoms of the disease were imperfect. At present, in the twelfth generation, the disease appears in twelve days.

The Imperial Academy Prizes

In the general meeting of the Imperial Academy, the prize winners for the year 1925 were selected. The imperial prize was conferred on a geologist, aged 26. The academy prize was awarded to Prof. Dr. Seizo Fujinuma of the Medical College of Aichi University, whose work was "The Histologic Study of Oxydase." He is said to have pursued his researches for more than ten years, meanwhile making a clinical study of the pathologic changes involved. His published reports amount to twenty-four, of which the last gives authority to the theory of oxidation in the tissue cells. The imperial wedding commemoration prize of the Osaka *Mainichi-Shimbun* (Daily News) was given to Prof. Dr. C. Ogata and Prof. Dr. J. Shimazona of the Medical College of the Tokyo Imperial University, who worked on the same subject, "The Experimental Study of Lack of Vitamin B." Both came to the conclusion that when man and other animals suffer from this disease, the lack of proper nourishment, the loss of weight, the impoverishment of blood, etc., are evident, but in the heart and veins no change such as often found in beriberi is to be seen.

The Insane and Asylums

Dr. Naoki Sugita informs us that Japanese are taken with mental diseases in the spring and summer more than in the other seasons. In the suburbs of Tokyo is a hospital for the insane with 700 beds, while the Osaka prefecture is now building one that will admit 300 patients. There are fourteen additional public and forty-one private asylums in Japan proper, besides many hospitals, public or private, with clinics for mental diseases.

Union Hospital

April 27, a meeting was held in Tokyo to establish a union hospital in the suburbs of Tokyo. The hospital will make it unnecessary for practitioners, able and experienced but without hospitals of their own, to send their patients to bigger hospitals. Also, their patients need not undergo the inconvenience and expense of changing physicians.

Physical Education

The authorities have decided that in the next budget year they will establish a physical culture staff consisting of forty-seven officials of so-nin rank and ninety-seven officials of han-nin rank, who shall be posted in every prefecture throughout Japan. The educational department has also established a research institute of physical education. The main building and fine gymnasium of the institute has just been completed in the suburbs of Tokyo. There is to follow a track 330 meters long, tennis courts and a swimming pool, the whole site and compounds covering about 40,000 square meters and being surrounded with beautiful woods and small

valleys. The institute is intended to conduct research on physical education. The institute has much to perform in the future in giving courses of lectures and training, coaching athletes and publishing books.

Increase of Physicians

According to figures published by the department of home affairs of Japan, the number of physicians in this country in 1925 was 43,702, including 1,271 new medical graduates. Although for the last ten years there has been a decrease of 937 practitioners, the number of new graduates increases by about 350 more year by year. Dr. Sakuzo Ujihara in the department of home affairs is of the opinion that the greater the number of practitioners, the higher the medical fees; for each practitioner is apt to distribute the cost of his own maintenance among his patients. The increase of our population being about 700,000 a year, he argues that we must limit the number of new physicians to 500 at most. His private opinion is that the department of home affairs should license only those who pass the government examination, Dr. Nishimine argues that, though the department of education must regulate the number of medical graduates, our country is still in need of more and better practitioners in order to maintain our national health.

Periodicity of Conception

According to Dr. Kochu Narumi of the Kiuchi Institute, the periodicity of conception of 1,000 Japanese women can be classified into five types: (1) two year type (the period between conceptions is quite regular—from a year and a month to two years); (2) three-year type (from two years and a month to three years); (3) four-year type (from three years and a month to four years); (4) five-year type (from four years and a month to five and more than five years); (5) unusual types. The average period of all except those of the unusual types is just two years, three months and eighteen days. In a woman of the standard three-year type, intervals of conception maintain the same periodicity irrespective of her increasing age. The women of two-year and four-year types also repeat their conceptions regularly.

The Central Antituberculosis Society

The twelfth general joint meeting of the local antituberculosis societies in Japan, held at Nagano this month, has decided that a central association shall be organized with the name of the Japan Central Antituberculosis Society in order that it may formally send representatives to the international antituberculosis association, to be held in Los Angeles next autumn. The newly organized society is to consist of all members of every public or private society in Japan which is interested in tuberculosis.

Abolition of "Patent Medicine" Tax

Readjustment of taxation being the main policy of the present Japanese cabinet, Mr. Hamaguchi, minister of finance, proposed that the "patent medicine" tax laws should be abolished. His argument was that such laws imposed a tax on the poor, who would sooner take "patent medicines" than consult physicians. In spite of the strong opposition of the medical profession, the bill for abolition of these taxes passed the last session of the imperial diet.

Marriages

HANNS BERNHARD MUELLER, Ann Arbor, Mich., to Miss Henny R. Cramer of Lincoln, April 18.

JOHN VINCENT LAMBERT to Miss Margaret May Carroll, both of Chicago, May 1.

ALBERT L. SCHNEIDER, Brady, Neb., to Miss Flora Crane of Denver, recently.

Deaths

Arthur Righton Dray, Beirut, Syria; Medico-Chirurgical College of Philadelphia, 1905; also a dentist; professor of oral surgery, operative dentistry, and director of the school of dentistry, American University of Beirut; formerly a practitioner in Philadelphia; aged 53; was killed, March 4, by an insane servant.

James H. Seyler, Preemption, Ill.; Western Reserve University School of Medicine, Cleveland, 1867; University of Pennsylvania School of Medicine, Philadelphia, 1868; also a druggist; for twenty-five years postmaster; aged 83; died, April 25, of senility.

Charles Louis Chasins ✠ New York; Cornell University Medical College, New York, 1902; specialized in otology, laryngology and rhinology; on the staff of the Community Hospital; aged 46; died, April 29, of coronary thrombosis.

Thomas Martin Darwin, Cooper, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1902; member of the State Medical Association of Texas; served during the World War; aged 47; died, March 30.

Theodore Clement Wood, Haverstraw, N. Y.; Medical Department of the University of the City of New York, 1879; member of the Medical Society of the State of New York; aged 72; died in January, of dilatation of the heart.

Elmer E. Vaughan ✠ Chicago; Hahnemann Medical College and Hospital, Chicago, 1889; formerly professor of surgery at his alma mater; aged 60; died, April 30, of splenomyelogenous leukemia.

James Dennistoun Jones, Basswood, Manitoba, Canada; M.R.C.S., England, 1914; L.R.C.P., London, 1914; M.B., B.Ch., University of Cambridge, 1918; aged 38; died, January 20, at Dauphin, of heart disease.

John L. Harris, Webster, S. D.; Hahnemann Medical College and Hospital, Chicago, 1875; Medical Department of the University of Illinois, Chicago, 1891; aged 77; died, April 16, of heart disease.

Le Baron Wilmot Jones, Pleasantville, N. Y.; Bellevue Hospital Medical College, New York, 1892; on the staff of the Ossining (N. Y.) Hospital; aged 55; died, April 28, following a long illness.

George T. Hagen, Johnson City, N. Y.; Syracuse University College of Medicine, 1923; served during the World War; aged 26; died, April 4, at the Johnson City General Hospital, of pneumonia.

Henry Clinton Peninger, Lacamp, La.; Memphis Hospital Medical College, 1901; member of the Louisiana State Medical Society; aged 49; died recently, at Glenmora, of chronic interstitial nephritis.

Mars W. Carpenter, Cleveland; Western Reserve University School of Medicine, Cleveland, 1902; member of the Ohio State Medical Association; aged 58; died, February 17, of cerebral hemorrhage.

Alton J. Turney, Crutchfield, Ky.; Vanderbilt University Medical Department, Nashville, Tenn., 1891; member of the Kentucky State Medical Association; aged 57; died, April 13, of heart disease.

Charles N. Powell, Deweyville, Texas; St. Louis College of Physicians and Surgeons, 1893; member of the State Medical Association of Texas; aged 57; died, February 18, of pneumonia.

Henry Wallwin, Barrie, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1889; formerly member and chairman of the board of education; aged 66; died, March 1.

Millard F. Stults ✠ Wiota, Iowa; College of Physicians and Surgeons, Keokuk, 1878; secretary of the Cass County Medical Society; aged 69; died suddenly, April 16, of heart disease.

Ernest Raymond Schilling, Glen Cove, N. Y.; Albany Medical College, 1915; member of the Medical Society of the State of New York; aged 36; died, April 24, of pneumonia.

Harry Coleman Dunlavy, Shelby, Iowa; Northwestern University Medical School, Chicago, 1917; aged 32; died, April 19, at a hospital in Blair, Neb., of injuries received in an accident.

John James Mudd, Hardyville, Ky.; University of Louisville School of Medicine, 1876; Jefferson Medical College of Philadelphia, 1890; aged 80; died, April 12, of senility.

Wilbur G. Melaas ⊕ Beloit, Wis.; Rush Medical College, Chicago, 1905; aged 42; died, April 17, at the Emergency Hospital, of shock and hemorrhage following a cholecystectomy.

Eli Stillman Bailey, Chicago; Hahnemann Medical College and Hospital, Chicago, 1878; aged 74; died, April 26, at the Hinsdale (Ill.) Sanitarium, of cerebral hemorrhage.

William D. Matney, Greenville, Ill. (licensed, Illinois, 1878); Civil War veteran; aged 85; died, April 9, at the Soldiers' and Sailors' Home, Quincy, of paralysis.

Jonathan J. Evans, Friend, Neb.; Eclectic Medical Institute, Cincinnati, 1880; Columbus Medical College, 1883; aged 71; died, April 5, of cerebral hemorrhage.

Marion Thrasher, San Francisco; University of California Medical School, San Francisco, 1890; aged 83; died, April 4, at Palo Alto, Calif., following a long illness.

Maurice Enright, Brooklyn; Medical Department of Columbia College, New York, 1885; aged 53; died, April 8, of bronchopneumonia and chronic endocarditis.

James M. Grant, Petersburg, Ky.; Medical College of Ohio, Cincinnati, 1873; Jefferson Medical College of Philadelphia, 1875; aged 73; died, March 24, of paralysis.

Clarence P. Battles, Hot Springs National Park, Ark.; Rush Medical College, Chicago, 1879; formerly a druggist; aged 72; died, March 31, at Girard, Pa.

Michael Charles Golden, Taunton, Mass.; University of Vermont College of Medicine, Burlington, 1881; aged 71; died, April 13, of cerebral hemorrhage.

John W. Forrest, Lynnville, Ky.; University of Tennessee College of Medicine, Memphis, 1900; aged 72; died, January 14, of chronic nephritis.

Robert Simpson Paxton, College Corner, Ohio; Miami Medical College, Cincinnati, 1882; aged 73; died, April 17, of angina pectoris.

John R. Woltz, Dobson, N. C.; Medical College of Virginia, Richmond, 1867; Civil War veteran; aged 85; died, April 10, of senility.

John W. Coy, Bolivar, Mo.; St. Louis College of Physicians and Surgeons, 1893; aged 56; died, April 6, of bronchopneumonia.

Fred Henry Fearl, Orange, Mass.; University of Vermont College of Medicine, Burlington, 1890; aged 62; died, March 24.

Thomas Henry Morgan ⊕ New York; Trinity Medical College, Toronto, Ont., Canada, 1897; aged 57; died, April 9, of uremia.

Mary M. Huntley, Olympia, Wash.; University of Buffalo Department of Medicine, 1896; aged 64; died, March 3, at Puget.

John Donald Proctor ⊕ Keene, N. H.; Tufts College Medical School, Boston, 1897; aged 57; died, April 8, of pemphigus.

Frederick E. Fooks, Baltimore; Washington University School of Medicine, Baltimore, 1873; aged 77; died, March 25.

Alvin A. Williamson, Marshall, Ind.; Medical College of Indiana, Indianapolis, 1898; died, April 5, of heart disease.

Charles H. Boaz, Mattoon, Ill.; Chicago Homeopathic Medical College, 1890; aged 72; died, April 24, of angina pectoris.

Edward W. Toole ⊕ Selingsgrove, Pa.; College of Physicians and Surgeons, Baltimore, 1881; aged 74; died, March 13.

James Wallace Smuck, Toronto, Ont., Canada; Victoria University Medical Department, Toronto, 1892; died, March 6.

Lewis Cass Landon, Indianapolis (licensed, Indiana, 1897); Civil War veteran; aged 84; died, April 16, of heart disease.

William H. Lewis, Mount Carmel, Pa.; Jefferson Medical College of Philadelphia, 1888; aged 65; died in March.

Miles Cabel McKee, Whitesburg, Ky.; University of Louisville School of Medicine, 1918; aged 43; died, April 20.

Joseph Mayo Harris, Sedalia, Mo.; Meharry Medical College, 1893; aged 67; died, March 29, of heart disease.

Everett Morton Evans ⊕ Mecca, Ind.; Pulte Medical College, Cincinnati, 1895; aged 61; died, February 20.

Antonio Capozzi, New York; University of Naples, Italy, 1886; aged 64; died, April 9, of lobar pneumonia.

Samuel J. Lisman, Oaktown, Ind.; Medical College of Ohio, Cincinnati, 1872; aged 84; died, February 20.

J. C. Hurst, Saxon, W. Va. (licensed, West Virginia, under the Act of 1881); died, March 19.

J. C. Wilhite, Sardis, Tenn. (licensed, Tennessee, 1908); died, April 1, of heart disease.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

PROPRIETARY MIXTURES SYNDICATE

Another Medical Fraud Debarred from the Mails

Kansas City, Missouri, which until recently, at least, has had the unenviable distinction of harboring some of the worst medical mail-order frauds in the country, is, or possibly we should say was, the home of the Proprietary Mixtures Syndicate, Inc., and Yonga Yoga Scientist, Inc., two imposingly named pieces of quackery operated by one Thomas W. Douglas and his wife Maye. Douglas' scheme was to sell through the mails a number of "patent medicines" which Douglas called "Formulations." His method of diagnosis was to require the birth date and from this he pretended to be able to determine what ailed the victim, and the evidence showed that he usually extracted about $100 from each person that "bit" on his scheme.

On March 13, 1926, Douglas was called on to show cause by April 9 why a fraud order should not be issued against him and his fake concern. He appeared on that date with his attorney, Austin F. Canfield of Washington, D. C. On April 17, 1926, a fraud order was issued against Proprietary Mixtures Syndicate, Inc., Mrs. M. Douglas, Thomas Douglas and Yonga Yoga Scientist, Inc.

The memorandum to the Postmaster General of Judge Horace J. Donnelly, Solicitor of the Post Office Department, gives in detail the government's case against these quacks.

We quote in part from the memorandum:

"Mr. Thomas W. Douglas and wife, Maye Douglas, are engaged in the business of selling through the mails certain medicinal preparations called 'Formulations,' which, it is claimed, will cure remitters of practically every disease and ailment known to humanity, including cancer, tuberculosis, Bright's disease, stomach, liver and kidney 'troubles,' genito-urinary ailments, and even blindness in some instances. All the information Douglas and his wife claim is really necessary for treating a prospective patient through the mails is the date of birth."

The memorandum continues:

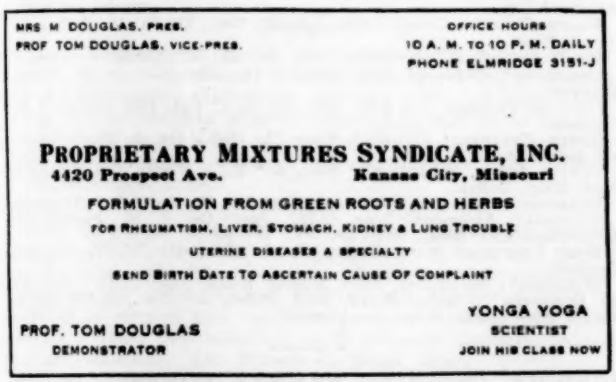
"The evidence shows that Mrs. Douglas has no medical training whatever, but Mr. Douglas claims he studied certain branches of medicine in this country and abroad, and that he made it a practice to pick herbs of various kinds since he was a boy. He was rather hazy as to the particular studies he pursued in several universities he mentioned. He claimed he paid for his instruction, but admitted he was not enrolled in any medical institution. He admitted that he does not reach his conclusions from a medical standpoint, but makes his alleged diagnoses astrologically or by 'rule.' He testified, however, that he does not need to know the exact moment and place of birth, but claimed that all the information he needs to determine what diseases or ailments individuals are suffering from is to have simply the date of their birth.

"According to the evidence Douglas employs no physician, pharmacist or chemist, all the work being done by himself and wife at their home. Sometimes they have a temporary employee. The medicines are put up in part by Parke, Davis & Company, and Douglas informed the inspector that Charles H. Hunter, then in Africa, doing 'root and herb' work, mixes 'different strengths' of the medicines used. Douglas stated he had quite a stock of medicines on hand already mixed, sufficient to last until Hunter returned. Douglas calls his medicines 'Formulations,' and informed the inspector that he has from 1 to 46,000 'numbers,' representing 'different elements of strength.' At the hearing he was either unable or unwilling to state the cost to him of his several medicines or 'Formulations.' He stated the 'Formulations' were secrets, and that he charged patients from $35.00 up for the diagnosis and treatments. The evidence shows that some persons were induced to pay him sums of several hundred dollars. I find from the evidence that the favorite method being practiced by Douglas on credulous persons is to get them to purchase

the regular treatment and then to have them purchase a further supply to keep them from 'going back,' or, as he also says, to keep them from becoming 'stagnated.' Douglas informed the inspector that the claims made for the medicines are based on so-called testimonials from laymen.

"Mr. Douglas was asked at the hearing to state the basis used by him in determining from what diseases or ailments a particular person suffered. He replied that the individual's birthdate enabled him to say which of the signs of the Zodiac the individual came under, whether within the 'division of earth, air, fire or water,' and that by means of certain mathematical calculations which he claims to make he could tell just what disease or ailment the individual had. He admitted he might make occasional mistakes. He alleged that while persons born under the same sign of the Zodiac are 'predisposed' to the same diseases and ailments, yet they don't all have the same trouble, but that he is able, with nothing else at hand concerning the individual except the birthdate, to differentiate between the various ailments in the most minute detail. He admitted that persons born under a certain sign of the Zodiac might have the same disease as persons born under any other sign, but that this also made no difference so far as his ability to diagnose the case is concerned."

"Concerning his method of diagnosing, Mr. Douglas was either unwilling or wholly incapable of explaining it, but claimed he used secret methods. He sought in every way to becloud the issue, regardless of questions asked him in an effort to bring out the facts. He claimed that he and Mrs. Douglas were the only ones who knew the secret.


MRS M DOUGLAS, PRES.
PROF TOM DOUGLAS, VICE-PRES.

OFFICE HOURS
10 A. M. TO 10 P. M. DAILY
PHONE ELMRIDGE 3151-J

PROPRIETARY MIXTURES SYNDICATE, INC.
4420 Prospect Ave. Kansas City, Missouri

FORMULATION FROM GREEN ROOTS AND HERBS
FOR RHEUMATISM, LIVER, STOMACH, KIDNEY & LUNG TROUBLE
UTERINE DISEASES A SPECIALTY
SEND BIRTH DATE TO ASCERTAIN CAUSE OF COMPLAINT

PROF. TOM DOUGLAS
DEMONSTRATOR

YONGA YOGA
SCIENTIST
JOIN HIS CLASS NOW

"I am convinced from the evidence in the case that the claims of Douglas respecting the so-called diagnoses are false and fraudulent.

"Douglas does not advertise in newspapers, or circularize through the mails. He obtains 'patients' by distributing printed cards [see illustration.—ED.] through the medium of former patients or agents who, he says, travel from place to place selling his medicines on commission."

Douglas assumed the title of "Professor" as the result of some study alleged to have been made by him in India. Both the Proprietary Mixtures Syndicate, Inc., and the Yonga Yoga Scientist, Inc., were incorporated in Arizona. Both of them were owned lock, stock and barrel by Douglas and his wife.

"Mr. Douglas testified at the hearing that since beginning his operations in 1922 he has treated approximately 1,500 persons. He also stated that the charges for the treatment are from $35.00 up. On this basis he would have taken from the public a minimum of $52,500. It is much more probable, however, that these figures would run much higher, as the evidence shows patients are usually asked to pay Mr. Douglas around $100.00."

Judge Donnelly's memorandum closed with the following pertinent statement:

"According to the medical testimony adduced by the Government in this case, many of the diseases undertaken for treatment by Douglas are of a very serious nature, and unless properly diagnosed and intelligently treated may result disastrously to the sufferer. Such diseases and ailments often tax to the utmost the knowledge and facilities of the most skilled physicians and surgeons with the patient directly under observation.

"The futility of treatment by mail, where the patient has never come in contact with the physician, to say nothing of a layman attempting to diagnose and treat, is readily apparent. As stated before, Douglas claims to make his diagnosis by 'rule.' He needs no symptoms, just the birthdate. His conclusions, which he admits are the same whether the person is real or imaginary, are thus arrived at by combining the so-called rule or rules with what additional information he may obtain from the patient and possibly an active imagination."

Some late activities of the Proprietary Mixtures Syndicate, Inc., were brought to the attention of the Bureau of Investigation of the American Medical Association some weeks ago. A Colorado physician sent to the Association a number of nostrums put out by this concern with the request that information be furnished as to whether or not any of them contained iodine. It seems that a patient of the doctor had paid $236 for this quackery, which was to cure her of blindness. The woman had thyroid adenoma, and following the use of the nostrums became seriously thyrotoxic. One of the specimens sent in by the doctor was found to be essentially tincture of iodine!

Correspondence

"THE SPLEEN IN MEASLES"

To the Editor:—In THE JOURNAL, April 17, in the editorial on "The Spleen in Measles—An Overlooked Symptom," it is stated that "only now has it been made unmistakably clear through the records of Bleyer of the St. Louis Children's Hospital that enlargement of the spleen should be included in the symptomatology of measles." And at the close, "And all of this is the simple finding regarding one of the largest organs in the body in the examination of a few hundred sick children, while half a hundred textbooks have denied, disregarded or debated the symptom."

Since 1923 I have been calling attention to this symptom in my reports to the International Health Board, to the state board of health, and in published letters and articles, begging those who had opportunity to follow the matter up. The priority of discovery makes no difference, but the difference in conclusions reached should cause us to peruse the matter further.

In Public Health Bulletin 156, page 133, I am quoted as saying at the New Orleans meeting in 1924: "But as valuable as the method is, it must be remembered that other things (besides malaria) may enlarge the spleen. Dawson, Ga., has been drained and is practically free from malaria. In examining the first three grades of the school there, I found fully 75 per cent of the children with enlarged spleens, though there was no history of malaria, and they were as pink and healthy a bunch as I have ever seen. . . . Every one of them had just recovered from measles.

"I visited a number of other towns (Cordele, Vienna, Unadilla) and counties, and I soon got so I could examine a few children and state that there had been an epidemic of measles among the children. And I never once went wrong.

"The enlargement from measles is not great, usually what Dr. Darling calls 'palpable on inspiration,' and has a dough-like or boggy feeling, distinguishing it from the hard, sharp-edged spleen of malaria. The surprising thing about these measles spleens was the length of time that they remained enlarged. After thirty days, 85 per cent were still palpable, with a slow decrease each month until after six months, about 20 per cent were still palpable. . . . Following about twenty cases of enlarged and troublesome tonsils I found an enlargement. This makes me think that even a throat specialist might make use of this method of examination. They are divided as to whether to remove all enlarged

tonsils or not. If I had a case of enlarged tonsils with a palpable spleen I would surely remove those tonsils, for I would know that they were poisoning the patient.

"I am dwelling on these things in the hope that others will take it up and see what we can find out about the spleen following scarlet fever, smallpox and other infections."

Your editorial mentions the "almost abrupt appearance of the spleen during the eruptive stage of measles, and the suddenness of its disappearance as the rash subsides." I never saw any cases during the eruptive stage. All my patients had recovered and were back in schools, and the thing that interested me was the fact that many of them were still palpable for six months. I cannot explain this difference, unless it is due to different methods of palpating. In our method the patient lies with head to the examiner's left, flat on back, perfectly relaxed, knees flexed. The examiner's fingers are placed rather lightly at the border of the patient's left ribs, and the patient is requested to breathe deeply. With practice, a very small spleen may be felt to descend and tap the fingers.

In rubella and in chickenpox I have not been able to demonstrate an enlarged spleen, and I am wondering whether every epidemic of measles would present this sequela with equal constancy. Certainly we need others to record their observations.

M. A. FORT, M.D., Bainbridge, Ga.
Director, Tri-County Health Work.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HEALING OF DRILL HOLES IN BONE

To the Editor:—Please advise me as to the time required, following the drilling of an osteomyelitis, adjacent to the upper epiphyseal end of the tibia but not proximal to it, for such drill holes to heal so thoroughly that they will not show on a roentgenogram, assuming that the drill was of moderate or relatively small size.

L. H. CHILDS, M.D., Flint, Mich.

ANSWER.—So far as we know, there never has been a statement of observations of this nature in the literature. Healing may take months or even a year, depending on the size of the drill holes, in a case in which the osteomyelitis was minimal.

"IRRITATION FOLLOWING SHAVING CREAMS"

To the Editor:—In THE JOURNAL, April 17, appeared a note relative to eczema from the use of "Molle" and "Barbasol." I can add to these reports a case of edema. The patient had a dry, scaly skin and I suggested using one of these creams after shaving, instead of soap and water. Within five minutes after use of Molle, the patient's face swelled almost beyond recognition. The condition was relieved by epinephrine administered hypodermically. I wrote to the makers of the product, explaining the case and requesting information as to the ingredients of their cream, as I wished to discover the offending protein. I received, however, only a polite but meaningless letter H. F. A., M.D.

INJECTION OF TRYPARSAMIDE

To the Editor:—I have received a circular which says that tryparsamide may be given subcutaneously. While giving an injection of it into a small vein, I unhappily got a small amount of it into the tissues outside the vein, and an abscess resulted. Is it supposed to be a severe irritant or is it safe to give it subcutaneously as stated? Please omit name.

M.D., Chicago.

ANSWER.—The general experience of all physicians who have used tryparsamide extensively has been that it is almost free from any local irritative action, and that the patient experiences no discomfort if part of the injection goes outside the vein. Thus, Wade H. Brown and Louise Pearce (THE JOURNAL, Jan. 5, 1924, p. 5) write that "very slight local irritation is produced by subcutaneous or intramuscular injections." However, as a matter of fact, the drug is almost exclusively given intravenously.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD OF OTOLARYNGOLOGY, CANADA: Montreal, June 1. Sec., Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Mo.
DELAWARE: Wilmington, Regular Board and Homeo. Board, June 15-17. Pres., Dr. H. W. Briggs, Wilmington.
FLORIDA: St. Petersburg, June 14-15. Sec., Dr. H. M. Rowlett, Box 603, Tampa.
GEORGIA: Atlanta, June 9-11; Augusta, June 1-3. Sec., Dr. C. T. Nolan, Marietta, Ga.
IOWA: Iowa City, June 8-10. Commissioner of Health, Dr. Don M. Griswold, State Capitol, Des Moines.
KANSAS: Kansas City, June 15. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 24-26. Sec., Dr. A. T. McCormack, 532 West Main Street, Louisville.
MARYLAND: Baltimore, Reg. Bd., June 15-18. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. Homeo. Bd., June 15-16. Sec., Dr. Joseph S. Garrison, Old Orchard Rd., Ten Hills, Baltimore.
MICHIGAN: Ann Arbor, June 8-10. Detroit, June 14-16. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 15. Sec., Dr. A. E. Comstock, 734 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 28-July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.
NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec., Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.
NEBRASKA: Omaha, June 8-10. Director, Bur. of Exam. Bds., Mrs. Clark Perkins, Lincoln.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, Room 1101, Trenton Trust Bldg., Trenton.
NEW YORK: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Mr. Herbert J. Hamilton, Education Bldg., Albany.
NORTH CAROLINA: Raleigh, June 21-25. Sec., Dr. K. P. B. Bonner, Morehead City.
NORTH DAKOTA: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, Columbus.
OKLAHOMA: Oklahoma City, June 15-16. Sec., Dr. J. M. Byrum, Shawnee.
OREGON: Portland, July 6-8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.
TEXAS: Austin, June 15-17. Sec., Dr. T. J. Crowe, 918 Mercantile Bank Bldg., Dallas.
VERMONT: Burlington, June 23. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 16-19. Sec., Dr. J. M. Preston, 720 Shenandoah Life Bldg., Roanoke.
WEST VIRGINIA: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.
WISCONSIN: Milwaukee, Basic Science Board, June 12-13. Sec., Dr. M. F. Guyer. Regular Board, June 29-July 1. Sec., Dr. Robert E. Flynn, State Bank Bldg., La Crosse.

SCHOOLS OFFERING SUMMER COURSES IN 1926

Prepared by the Council on Medical Education and Hospitals

California

STANFORD UNIVERSITY SCHOOL OF MEDICINE, 2398 Sacramento Ave., San Francisco.—Courses are offered for qualified graduates in medicine and undergraduates of this and other schools for clinical and laboratory work in the following departments as special workers: pharmacology, pathology, general medicine, diabetes, electrocardiography and basal metabolism, chest diseases, pediatrics, neuropsychiatry, skin and syphilis, metabolism laboratory, radiology, physiotherapy, general surgery, orthopedic surgery, genito-urinary surgery, ophthalmology, otorhinolaryngology, surgical pathology, obstetrics and gynecology, and female urology. Summer term begins, June 15, and ends, September 1. Dr. William Ophuls, dean.

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, Parnassus and Third avenues, San Francisco.—Courses for qualified graduates in medicine, given in general medicine, pediatrics, gastro-intestinal diseases, dermatology, syphilology, radium therapy, general surgery, orthopedic surgery, otorhinolaryngology, ophthalmology, genito-urinary diseases, general pathology, roentgen ray, obstetrics and gynecology, circulatory diseases, laboratory diagnosis, neurology and neuropsychiatry, and neuro-otology. Summer term begins, June 7, and ends, July 3. Dr. L. S. Schmitt, acting dean.

Colorado

COLORADO SCHOOL OF TUBERCULOSIS, Colorado Springs.—Course designed for qualified graduates. Term begins, July 1, and ends, August 1. From August 3 to 10, opportunity will be offered for practical work in the various sanatoriums. The preference of the students for special subjects, such as laboratory methods, roentgen ray, artificial pneumothorax and

physical diagnosis, will be consulted as far as possible. Dr. G. Burton Gilbert, secretary.

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, Denver.—Courses open for undergraduate or graduate students, in anatomy, bacteriology and public health, biochemistry, pathology, clinical pathology, physiology and pharmacology. Summer session divided into two terms. The first begins, June 21, and ends, July 24; the second begins, July 26, and ends, August 28. Dr. Charles N. Meader, dean.

Connecticut

NEW HAVEN SCHOOL OF PHYSIOTHERAPY, 303 Whitney Avenue, New Haven.—Courses for qualified graduates in medicine. Individual instruction may be had and also practical work on apparatus. The course begins, June 10, and ends, October 1. Dr. Harry Eaton Stewart, director.

District of Columbia

GEORGE WASHINGTON UNIVERSITY MEDICAL SCHOOL, 1335 H Street, N.W., Washington.—Courses offered for medical students in pathology, bacteriology and clinical microscopy. An opportunity in the laboratory for two or three graduate students who desire to spend their entire time in laboratory work is also offered. Dr. W. C. Borden, Dean.

HOWARD UNIVERSITY SCHOOL OF MEDICINE, Corner of Fifth and W streets, N.W., Washington.—Courses open to graduates of recognized medical colleges. Instruction given in general surgery, gynecology, genito-urinary surgery, internal medicine, otolaryngology, ophthalmology, roentgenology, public health, laboratory methods and physical diagnosis. Summer term begins, June 7, and ends, July 19. Dr. Edward A. Balloch, dean.

Georgia

EMORY UNIVERSITY SCHOOL OF MEDICINE, 98 North Butler Street, Atlanta.—A clinical course is designed for graduates and undergraduates during the first two weeks in July. This course will be entirely clinical, devoted primarily to general medicine and surgery, but with a few things in the specialties which bear particular relation to these subjects. Dr. Russell H. Oppenheimer, dean.

Illinois

RUSH MEDICAL COLLEGE, Wood and Harrison streets, Chicago.—This school has the four quarter system, and therefore the usual summer course is offered to undergraduates. Instruction in otology and laryngology for graduates in medicine is offered and facilities permit of taking but eight men each year, two entering each quarter—January, April, July and October. Dr. Ernest E. Irons, dean.

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 South Lincoln Street, Chicago.—This school has the four quarter system, and therefore the usual summer course is offered to undergraduates. Dr. Louis D. Moorhead, dean.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, Congress and Honore streets, Chicago.—Postgraduate course for physicians will be offered in all departments throughout the month of June. In some departments the work will be given throughout the day, in others, only half the day. In some fields the courses will be given six days a week, others only three, four or five days a week. Registration will be limited to a small number. The full-time registration fee will be $100, for half-time registration (or less) $50. Mr. William H. Browne, secretary.

Indiana

INDIANA UNIVERSITY SCHOOL OF MEDICINE, Indianapolis.—During the summer of 1926, short courses beginning June 10 and lasting for six weeks will be offered to the physicians of Indiana. Instruction given in pathology, pharmacology, medicine, surgery, gynecology, genito-urinary diseases, rhinology, otology, laryngology, ophthalmology and dermatology. For further information apply to the registrar.

Iowa

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, Iowa City.—Courses are offered for undergraduate students in the following departments: anatomy, histology, embryology, biochemistry, physiology and bacteriology. The summer course is for six weeks and a semester's work in any of the subjects mentioned may be completed with the exception of histology and anatomy, in which only a part of a semester's course can be completed. Dr. John McClintock, junior dean.

Kansas

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE, Lawrence-Kansas City.—Courses for medical students offered at Lawrence in physiology, bacteriology and immunology, and at Kansas City in pathology. Dr. H. R. Wahl, acting dean.

Louisiana

TULANE UNIVERSITY SCHOOL OF MEDICINE, 1551 Canal Street, New Orleans.—Courses offered for medical students in anatomy, embryology, histology, neuro-anatomy, physiologic chemistry, dermatology, special pathology and physical diagnosis. All courses begin, June 14, and continue for a period of six weeks, ending, July 24. Dr. C. C. Bass, dean.

Maryland

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE, Lombard and Green streets, Baltimore.—A review course for physicians will be offered during the month of June. These courses are not planned and will not serve to enable the practitioner to become a specialist; but it is hoped that they will meet the needs of those who wish to review the fundamental data in some field, and to inform themselves concerning recent advances in methods of diagnosis and treatment. Dr. J. M. H. Rowland, dean.

Massachusetts

BOSTON UNIVERSITY SCHOOL OF MEDICINE, 80 East Concord Street, Boston.—Dr. William Duncan Reid will offer a one month's course in cardiology either in July or in August at Boston University and associated institutions. Applicants are requested to write Dr. Reid for particulars.

HARVARD UNIVERSITY MEDICAL SCHOOL, 240 Longwood Avenue, Boston.—Courses for graduates open from June 1 to September 30, in anatomy, physiology, biologic chemistry, bacteriology, pathology, preventive medicine and hygiene. Dr. Samuel R. Meaker, secretary.

Michigan

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, Ann Arbor.—Courses open to undergraduate students and practitioners of medicine in the following departments: anatomy, bacteriology, dermatology and syphilology, internal medicine, neurology, obstetrics and gynecology, ophthalmology, otolaryngology, pathology, pediatrics, pharmacology, physiologic chemistry, physiology, roentgenology and surgery. Course begins, June 21, and ends, July 30. Dr. Hugh Cabot, dean.

Minnesota

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, Minneapolis.—This school has the four quarter system, and therefore the usual summer course is offered to both graduate and undergraduate students. Dr. Elias P. Lyon, dean.

Missouri

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Avenue, St. Louis.—Work adjusted to needs of three classes of students:

1. Undergraduate medical students. Courses in the laboratory branches are provided, so that students who desire may secure advanced standing or remove deficiencies in work previously taken. Open to both practitioners and undergraduates.

2. Preparatory and collegiate medical students. Courses in biology, inorganic and organic chemistry, physics and language are offered for the benefit of students who desire to attend a medical school but who still lack sufficient college credit to qualify for admission.

3. Teachers, etc. High school teachers and others who do not care for credit in medicine but who possess the required preliminary training will be admitted to the laboratory and other courses.

Session extends from June 1 to July 24. Apply to director of summer school.

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Euclid Avenue and Kingshighway, St. Louis.—A four weeks' course in obstetrics and diagnostic gynecology for general practitioners will be offered beginning May 24, and extending to June 19. During the first week in each June, September and December a course for practitioners who wish to acquaint themselves with the more recent developments in the study of diseases of the heart and circulation will be offered. Inquiries and applications should be made to the registrar.

Nebraska

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second and Dewey Avenue, Omaha.—Courses offered in physiology and clinical pathology, beginning, June 8. Dispensary and University Hospital assignments for medical college credit in clinical work will be continued. Other

courses may be planned if there is a demand on the part of the students. Dr. J. Jay Keegan, dean.

New Jersey

PHYSIATRIC INSTITUTE, Morristown.—The course, for graduate physicians, gives a practical working knowledge of the management of diabetes, obesity, nephritis, hypertension, etc., according to the methods employed in this institute. The work includes lectures and practical experience in the laboratory, diet kitchen and wards. The tuition is $150 for the one month of full-time work (July 1 to 31). Dr. Frederick M. Allen, director.

New York

ALBANY MEDICAL COLLEGE, 58-64 Eagle Street, Albany.—Graduate courses in public health for physicians in conjunction with the New York State Department of Health began in March and will end the latter part of June. It is possible that a course may be repeated in August or September. Communications and applications should be addressed to the director, Dr. Charles C. Duryee, State Department of Health, Albany.

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 437 West Fifty-Ninth Street, New York City.—Courses for medical students, offered from July 6 to August 13, in anatomy, bacteriology, cancer research, neurology and practice of medicine. Courses for graduates in medicine are given from June 1 to June 30, in medical diagnosis and pathology; in preventive medicine and public health, from July 6 to August 13; in internal medicine, from June 14 to July 16; in gastro-enterology (lectures, laboratory and clinical work), June, July and August. Dr. William Darrach, dean.

HERMAN KNAPP MEMORIAL EYE HOSPITAL, 500 West Fifty-Seventh Street, New York City.—A course in ophthalmology is offered to qualified medical practitioners which extends over a period of eight months. These courses start, April 1, July 1 and October 1. For further information apply to Dr. Gerald H. Grout, secretary.

NEW YORK EYE AND EAR INFIRMARY, Second Avenue, corner Thirteenth Street, New York City.—Courses offered for medical graduates in ophthalmology and otology. Apply to Dr. Webb W. Weeks, secretary, for reservation in the May, June or July classes.

NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL, 341-351 West Fiftieth Street, New York City.—Courses for qualified graduates in surgery, gynecology, urology and proctology. Courses may begin at any time. For information address executive officer.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, 301 East Twentieth Street, New York City.—Courses available during the summer term are the same as those offered during the year, open for general practitioners. Dr. William D. Cutter, dean.

TRUDEAU SCHOOL OF TUBERCULOSIS, Saranac Lake.—A six weeks' course for the intensive study of tuberculosis is being offered, from May 17 to June 26, for recent graduates and hospital interns. Dr. Edward R. Baldwin, director.

UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT, High Street, near Main, Buffalo.—Summer courses for graduates and students are being offered in anatomy beginning July 10, and in chemistry from June 15 to August 1. Dr. C. Sumner Jones, dean.

North Carolina

UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE, Chapel Hill.—No medical course offered this summer, but one extension course will be offered covering special subjects in general medicine. Further information may be obtained through the dean, Dr. I. H. Manning.

Ohio

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, 710 North Park Street, Columbus.—A course in bacteriology and general work in the dispensary are open to advanced undergraduate and graduate students. The summer quarter extends from June 17 to August 28. Dr. Eugene F. McCampbell, dean.

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, 2109-2115 Adelbert Road, Cleveland.—Starting about June 14, a summer course in biochemistry will be offered to undergraduates for make-up work. Course not given unless a certain number apply. Students from other schools admitted when feasible. Dr. Carl A. Hamann, dean.

Pennsylvania

UNIVERSITY OF PENNSYLVANIA GRADUATE SCHOOL OF MEDICINE, Philadelphia.—Courses for graduates, during the summer months, in various hospitals and institutions offered in conjunction with the graduate school are as follows: cardiology, May 3 to June 26 and August 30 to October 23; gastro-enterology, May 24 to July 2; operative surgery and surgical anatomy, April 19 to June 12; laryngoscopy, bronchoscopy and esophagoscopy, June 7 to June 19. Dr. George H. Meeker, dean.

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Bigelow Boulevard, Pittsburgh.—Postgraduate course for general practitioners begins, June 1, and ends, June 12. Address all communications to Edith S. Glenn, secretary.

Texas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 720 College Avenue, Dallas.—Work adjusted to needs of three classes:

1. Undergraduates and special students. Regular medical college courses, for which subject credit is given, is offered from June 14 to August 1.

2. Summer clinics for practitioners. These clinics are of a general character and extend from May 31 to June 12. No fees are charged nor are any certificates of attendance granted.

3. Public health course. This course is primarily for county and city health officers, and extends from May 31 to June 12, inclusive. No fees are charged, nor are any certificates of attendance granted. Dr. Walter H. Mouraund, dean.

UNIVERSITY OF TEXAS SCHOOL OF MEDICINE, Avenue B, between Ninth and Tenth streets, Galveston.—Summer clinics in all clinical subjects, including ward cases, obstetric practice and outpatient clinics, open to students of the medical school of the University of Texas from May 24 to June 5. Dr. William Keiller, dean.

West Virginia

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE, Morgantown.—Courses offered to undergraduate students in (gross) anatomy, including neurology, histology, physiologic chemistry and bacteriology, during the summer term of twelve weeks, which begins, June 21. Dr. John N. Simpson, dean.

Virginia

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE, Charlottesville, Va.—Courses in the medical sciences are being offered during the summer for medical students who are deficient in these subjects and desire to make a review: Group A, histology and embryology. Group B, anatomy, topographic anatomy and anatomy of the human nervous system. Group C, biochemistry. Group D, pharmacology. Courses will not be given unless a certain number apply. Dr. James C. Filippin, acting dean.

Wisconsin

UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, Madison.—Summer courses open to undergraduate students from June 28 to August 6 in anatomy, bacteriology, hygiene, medicine, pharmacology, physiologic chemistry and physiology. Dr. Charles R. Bardeen, dean.

Wisconsin January Examination

Dr. Robert E. Flynn, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held in Madison, Jan. 12-14, 1926. The examination covered 18 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 22 candidates examined, 20, including 4 osteopaths, passed and 2, including 1 osteopath, failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School	(1925)*		85.2
Rush Medical College	(1925) 86.8, 89.7, (1925)* 89.8,		92.7
University of Illinois College of Medicine	(1925)*		87.6
University of Michigan Medical School	(1925)		85.4
Harvard University	(1922)		87.5
University of Minnesota Medical School	(1925)		91
Washington University School of Medicine	(1924)		83
University of Pennsylvania School of Medicine	(1924)		88.7
Marquette University School of Medicine	(1908) 81, (1925)*		82.2
German University of Prague, Czechoslovakia	(1903)†		89.9
University of Jena, Germany	(1917)†		82.5
University of Budapest, Hungary	(1912)		80.6
Osteopaths	80.4, 81.5, 84.5,		90

College	FAILED	Year Grad.	Per Cent
National University of Athens, Greece	(1916)†		76.5
Osteopath			71.5

LICENSED BY RECIPROCITY			
College		Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1913)	Illinois
Hahnemann Medical College and Hospital, Chicago		(1908)	Illinois
Medical School of Maine		(1906)	Maine
Washington University School of Medicine		(1916)	Illinois
Albany Medical College		(1910)	New York
University of Nashville Medical Department		(1878)	Tennessee
University of Christiania, Norway		(1892)	Minnesota

* These candidates have finished their medical courses and will receive an M.D. degree on completion of a year's internship in a hospital.
† Verification of graduation in process.

Dr. Flynn also reports the special meeting held at Milwaukee, April 14, 1926, at which 5 candidates were licensed by reciprocity. The following colleges were represented:

LICENSED BY RECIPROCITY			
College		Year Grad.	Reciprocity with
Hahnemann Med. College and Hosp., Chicago		(1913), (1918)	Illinois
Kansas Medical College, Topeka		(1907)	Kansas
Harvard University		(1911)	Missouri
John A. Creighton Medical College		(1915)	Iowa

Social Medicine and Medical Economics

SOCIAL MEDICINE

A Method of Teaching the Public Health Point of View to the Medical Student

B. FRANKLIN ROYER, M.D., SC.D.

Medical Director, National Committee for the Prevention of Blindness

NEW YORK

About three and a half years ago a symposium on "The Next Step for State Health Departments" was conducted as a special session of the annual meeting of the American Public Health Association in Cleveland. Five distinguished state health officers presented their individual views in formal papers. The five authors left the impression with the audience that the medical profession, both the highly organized and the less well organized, was not approvingly cooperative and in some instances was openly antagonistic to public health work except of the police type, and was fearful of state medicine. The chairman of the meeting, Dr. John Dill Robertson, health officer of Chicago, challenged me, then executive officer of the Massachusetts-Halifax Health Commission, to state what the next step would be in Nova Scotia. When thus challenged by the chairman, I developed the thought that public health executives and teachers of hygiene in medical schools had heretofore failed to teach the medical student the right point of view toward social medicine and public health.

The plans and methods outlined extemporaneously were at that time in existence for the most part as a paper agreement only between Dalhousie University, Halifax, Nova Scotia, and the International Health Board, then representing Mr. John D. Rockefeller in distributing certain personal gifts for improving medical education in Canada. Enumeration was given of the organizations cooperating with the university in its medical teaching, as follows: one large general hospital, a children's hospital, two specialized hospitals, one for tuberculosis and one for maternity work all grouped about the medical school, a philanthropically maintained public dispensary of the usual type operating in a building some distance across the city, and the Massachusetts-Halifax Health Commission. All of these related institutions indicated a disposition to favor a special health center building if built in the university and hospital area from funds provided by Mr. Rockefeller.

The plan as outlined consisted of the erection of a special building[1] at the cost of a quarter of a million dollars, to be laid out for the accommodation of all public health clinics and of the curative medicine ambulatory clinics that might be required for a community already numbering 60,000 people. The hospitals, it was hoped, would in future refrain from developing outpatient dispensaries. The old Halifax Dispensary agreed to close its old building, move into this new building, and coordinate its activities (without losing its identity) with those services to be conducted under the Medical Department of Dalhousie University in the new health center building. The general social agencies of the city and the unofficial special health agencies operating in the south half of the city of Halifax and those that might develop around the hospitals would be offered headquarters in this new health center building.

The city health department, as then represented on the Massachusetts-Halifax Health Commission, fully understood the scheme, and the commission was expected to provide socially trained public health nurses and visiting housekeepers to cover every family patronizing the new health center. It was likely that the commission would meet operating costs of the various public health clinics for several years. It was expected that well baby, preschool age guidance, preschool age dental clinics, nutrition classes, posture services and diagnostic chest clinics would be included in this health center, and that the commission might assist the partially subsidized venereal disease clinic.

The Dalhousie University medical school, it was understood, would furnish all medical personnel and organize and maintain the full quota of outpatient department and ambulatory services, such as pediatric, general medicine, surgical, neurologic (including psychiatric) and, as soon as practicable, metabolic and such other services as might be required.

It was understood that there should be a close "tie-in" of all activities of this new building with the department of preventive medicine, and that the professor of this branch (hygiene and preventive medicine) should have an opportunity to exact of the medical student a complete home environmental study and habit study of assigned ambulatory cases carefully examined by him in the clinic building.

It was anticipated in this discussion that physical diagnosis and medical teaching would probably be carried on both in the public health clinics and in the curative medicine clinics, and that a student's studies would not be considered complete unless they included home visits and home studies covering every detail of living, diet, exercise, sleep, ventilation, clothing, and the thousand and one types of error and exasperation found in the home; that an opportunity would be afforded in this building for the student of medicine to bring his written report of the home environment and recommendations to the desk of the professor of hygiene and preventive medicine; and that this university teacher could have as a check-up against the student's hygiene study the complete environmental report of the well trained public health nurse, social worker or visiting housekeeper assigned to cover families patronizing the public health clinics and the curative medicine clinics.

It was even hinted in this extemporaneous discussion that the final grades to be given on hygiene and preventive medicine might advantageously be based on the practical application of the student's knowledge to these environmental studies and his recommendations based on them.

It was pointed out that such practical methods in teaching applied hygiene and preventive medicine would compare favorably with application of principles to practice in the other departments of a medical school. The didactic instruction in medicine, surgery, pathology, etc., is followed by practical application of these principles at the bedside, in the surgical clinic, or in the postmortem room.

The department of hygiene and preventive medicine may with such a plan supplement the didactic instruction of this

1. An illustrated article by Dr. William Harop Hattie on "Teaching Medical Students Newer Public Health Work," published in Nation's Health, June 15, 1924, shows plans of the health center building and gives some operation plans. A second article by the same author published in Modern Hospital, August, 1925, on "Public Health Clinic Correlates Preventive and Curative Practice," discusses this new coordinated etc.†

department with equally practical applied lessons, and utilize the grades thereon as a final grade.

Such an application would be new in medical teaching and would seem to give the medical student a practical view of applied social medicine as every physician should apply it.

The plan, as presented extemporaneously in Cleveland in 1922, materialized practically as outlined, and became operative in November, 1924. Dr. William H. Hattie, who for five years had been Nova Scotia's provincial health officer, and lecturer on hygiene and preventive medicine in the medical school of the university, resigned from his provincial position and gave full time to teaching work. His university chair was extended to include that of director of the newly erected health center building prior to its equipment.

For a year following the opening of this new building, Dr. Hattie has been watching the students of medicine with their opportunities to gradually become socially minded. He can watch the student who, until recently, had scant grasp of the influence of environment, reach the stage at which he recognizes how much of the condition that brought the patient to the clinic was due to environmental fault, and can see the student realize that in many instances medical problems may be corrected only by giving intense attention to environmental faults.

Dalhousie University is blazing a new trail in preventive medicine. Dr. Hattie is giving the students who pass his chair an opportunity to see that social medicine is far from being state medicine; in fact, is opposed to state medicine. He is making the young practitioner appreciate that physical examination of the patient and writing of a prescription for a drug are, after all, the smallest part of the sum total of the practice of medicine.

Dalhousie University's school of medicine is in a position to send out through the three maritime provinces practitioners of medicine who will have no fear of state medicine, but who will serve as the real leaven in their communities to stimulate and arouse those various social activities which, when coordinated with executive health work, will multiply the effects of public health endeavor manyfold. This new departure in teaching social medicine will be followed with great interest and is likely to be adopted in all progressive universities.

370 Seventh Avenue.

Book Notices

AVIATION MEDICINE. By Louis Hopewell Bauer, A.B., M.D., Major, Medical Corps; United States Army Commandant, the School of Aviation Medicine. Published by authority of the Surgeon General. Cloth. Price, $7.50. Pp. 241, with 35 illustrations. Baltimore: Williams & Wilkins Company, 1926.

The flight surgeon is destined to become second only to the commanding officer in the training and care of any aviation unit, and his great value to civil aeronautics will become indispensable as the larger companies are organized for the transportation of mail, express, freight and passengers. Little of originality is claimed by the author of this book, but he has endeavored to correlate the results of the many workers in their respective fields in such a way that the book will be of value not only to the flight surgeon, the student of aviation medicine and the recruiting air officer, but to the general medical man in all walks of life. The book is divided into three sections, each containing approximately sixty pages, and a supplement. The first section gives the qualifications of a flier. At present the best fliers are between the ages of 20 and 28. Those under 20 usually lack good judgment, while those over 35 should be taught only as administrative officers. Physically, the applicant should be well proportioned, while good eyesight is one of the most important prerequisites. Twenty twentieths is not too high, although twenty thirtieths in each eye may not disqualify. Judgment of distance and deep perception depends on good eyesight, and the applicant should have good peripheral vision and normal color vision. Latent hyperopia, heterophoria and night blindness should absolutely disqualify. The nose and throat should be free from disease and the ear should receive especial attention, particularly the drum, middle ear, eustachian tubes and hearing. Equilibrium, which plays an important part in flying, is governed by the whole proprioceptive mechanism. Vision, the vestibular mechanism and the indefinite "muscle sense" or "feel of the seat" are of importance. Nervous stability is an important factor, since the flier is subjected to unusual culminative stresses. The psychoses and psychoneuroses and even the family history may have an important bearing on the ability of the man to retain his nervous stability, while his own history should be obtained with the greatest care.

The second section considers the physiology of aviation, including the classification of the fliers. The author goes into the physiology of the respiratory and circulatory systems at sea level and at the higher altitudes, giving not only the change in hemoglobin, red cells and white cells, which is due to the lack of oxygen, but also the changes in the metabolic rate. Facts and figures prove that between 40,000 and 45,000 feet it is almost impossible for a human being to live, even though he is breathing pure oxygen, for beyond this point the available oxygen pressure in the lungs will be too low to sustain life. The heart at high altitudes is at no greater strain than the rest of the circulatory system. With a normal heart accompanied by soft arteries, the effects of altitude will not be lasting on either, as recovery is prompt on the administration of oxygen. Psychologically, the effects of altitude come on the aviator unawares: stimulation, followed by a feeling of well being, then decrease in attention and loss of muscle control. Altitude classification is rather difficult but is now being done with much success in the air service. Wind, cold and speed all have their deleterious effects on the aviator. To wind may be ascribed an increase in metabolism, with increased demand for oxygen; difficult breathing, and cooling of the body. Cold brings on stiffness, chilling and a tendency to sleepiness, and stimulates metabolism and the demand for more oxygen. Speed, especially the centrifugal force at curves, tends to cause anemia of the brain, with consequent haziness, laziness, dizziness and perhaps unconsciousness. Recovery is prompt.

The third section is devoted to the care and maintenance of the flier. Since great care is exercised in his selection and classification, even greater care should be exercised in keeping him fit, since the past has proved that deterioration is the natural tendency of all fliers. Fatigue may be brought on by too many hours of flying and by altitudes above 15,000 feet. Staleness and nervous exhaustion depend on habits and temperament of the individual, the type of machine and work, weather conditions, and the environment of the airdrome. Too much or too little flying, insufficient exercise, dissipation and loss of sleep have the same effect. The author believes that definite condition develops in a flier as a result of his air work. Mental and physical signs and symptoms are closely associated with "effort syndrome," nervous fatigue, distress on exertion, loss of interest in his work, poor muscular control, inattention and carelessness. Effort syndrome is an overresponse of the circulatory and respiratory systems to physical efforts, marked by breathlessness increased on exercise, precordial pain increased by exercise, exhaustion, mental and physical, palpitation, giddiness, even fainting, headache, lassitude, irritability, sleeplessness, inattention, cold hands and feet, and sweating of the hands, feet and axillae. This condition must be caught in its incipience by the flight surgeon in order to save a good flier and avoid a serious accident.

Chapter 13 describes the protective devices and their uses; the oxygen supply apparatus, the gas apparatus, liquid oxygen, the amount of oxygen required at certain given altitudes, masks, goggles, ear protection, helmets, parachutes, belts and clothing, giving in detail the best articles for use of the present day flier.

Special training is necessary to become a flight surgeon. He must first be well grounded in internal medicine, and in addition must have some knowledge of physiology, psychology,

ophthalmology and otology. He must be able to inspire confidence not only in the commanding officer, but also in the men under his care. He must actually live with his fliers and learn their inner life and must be able to recognize staleness, fatigue and physical unfitness in its incipience. He is both physician and trainer and his duties are quite different from those of a medical officer in any other branch of the service. The flight surgeon should actually fly in all sorts of weather, in different types of machine, across the country, and on acrobatic and altitude flights, so he may obtain a better insight into the life of his fliers. The civil flight surgeon is something yet to develop, but surely will be needed in the near future.

Chapter 15 is devoted to "Aviation Accidents and Their Prevention by the Flight Surgeon" so far as the pilot is concerned. He must weed out the unfit, the careless and the mentally and physically sick and thus prevent accidents. This chapter also covers the airplane ambulance, which it describes with its many uses, while chapter 16 gives a brief outline of the causes of dope poisoning by its various ingredients. Tetrachlorethane, which gives rise to toxic jaundice, is now very seldom used. Methyl, ethyl and benzyl acetate, which cause anemia, vomiting, fever and fatty degeneration of the endothelium of the blood vessels, are among the other ingredients of dope. Proper methods of treatment are also discussed.

The final chapter is devoted to civil aviation. At the present time there is no federal legislation governing aviation. This is a ridiculous situation, since a pilot rejected as unfit, either physically or mentally, by the government, may hire a plane and fly, thus endangering not only himself, but others and property. Requirements for civil aviation need not be as strict as for the air service but should receive careful attention when an adequate federal law is passed, and should require a medical examination at least once every six months. In this chapter standard forms for a medical certificate are described, while in the supplement may be seen the directions for Schneider's test for circulatory efficiency; blanks for the rebreathing examination; the pulse and blood pressure determination; directions to the clinician, the psychologist and the pilot; low oxygen tension, and physical examination for flying. All the chapters are extensively illustrated and show the latest apparatus used in the United States Army.

THE NEMATODE PARASITES OF VERTEBRATES. By Warrington Yorke, M.D., Professor of Parasitology, University of Liverpool and Liverpool School of Tropical Medicine, and P. A. Maplestone, M.D., D.S.O. With a foreword by C. W. Stiles, Professor of Zoology, United States Public Health Service. Cloth. Price, $9. Pp. 536, with 307 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

In the sixty years since the appearance of Schneider's monograph, the fragmentary and scattered contributions on the roundworms, of which there have appeared a very large number, have been in need of interpretation and correction. In the closely printed pages of this book are compressed a synopsis of the eight superfamilies recognized by the authors, a record of inadequately known and hence entirely unclassifiable genera, several briefer valuable lists, full indexes of generic and specific names, and finally a list of 684 articles cited in the text. The synopsis, which covers about 440 pages of the book, gives a succinct description of all known genera, including some that were necessitated by the work itself. The illustrations include more than a thousand sketches, most of which are new and all of which are good. To enter here into a critical analysis of results so extensive is impossible. That the details will excite criticism is a merit. Now for the first time biologists have a clear basis on which to work. The book shows that the study has been carried on primarily in the laboratory and on the specimens themselves. In consequence, it possesses permanent value. In view of the importance of *Nematoda* in human and comparative pathology, the medical worker will find this volume of marked service.

EINE STUDIE ÜBER KRÄMPFE (A Study of Convulsions). Von J. Hughlings Jackson. Uebersetzt und eingeleitet von Otto Sittig. Paper. Price, 8.40 marks. Pp. 145. Berlin: S. Karger, 1926.

The importance of Dr. Jackson's contributions to medical literature has long been recognized. The German publishers here make available a reprint of his original paper with a German translation on opposite pages.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

THE MODERN HOSPITAL YEAR BOOK. The Hospital Reference Book. An Annual Reference Volume on the Building, Equipment, Organization and Maintenance of Hospitals and Institutions. Also a Current Purchasing Guide to Hospital Requirements. Published for Hospital Executives, Building and Equipment Committees, Purchasing Departments and Architects. Sixth edition. Cloth. Price, $2. Pp. 779, with illustrations. Chicago: The Modern Hospital Publishing Company, Inc., 1926.

The title tells everything.

LEHRBUCH DER SPEZIELLEN PATHOLOGIE UND THERAPIE DER INNEREN KRANKHEITEN. Für Studierende und Aerzte. Von Professor Dr. Med. Adolf Strümpell, Direktor der medizinischen Klinik der Universität, Leipzig. Twenty-fifth edition. By Professor Dr. Med. et Phil. Carly Seyfarth. Second Volume. Paper. Pp. 985, with 200 illustrations. Leipsic: F. C. W. Vogel, 1926.

New edition of widely recognized German textbook of special pathology.

AN INTRODUCTION TO SURGERY. By Rutherford Morison, M.D., F.R.C.S., M.A., and Charles F. M. Saint, C.B.E., M.D., M.S., Professor of Surgery, Cape Town University, South Africa. Second edition. Cloth. Price, $4.50. Pp. 347, with 183 illustrations. New York: William Wood & Co., 1926.

New edition of standard work for students and young practitioners.

MANUAL OF EMERGENCIES: MEDICAL, SURGICAL AND OBSTETRIC. Their Pathology, Diagnosis and Treatment (Based upon Lenzmann's "Emergencies in Medical Practice"). By J. Snowman, M.D., M.R.C.P. Second edition. Cloth. Price, $4. Pp. 361. New York: William Wood & Co., 1926.

Brief practical manual for ready reference well printed on india paper.

STALE BREAD LOSS AS A PROBLEM OF THE BAKING INDUSTRY. By Joseph Stancliffe Davis, Ph.D., and Wilfred Eldred, Ph.D. Food Research Institute, Stanford University, California, Publication No. 1. Paper. Price, 50 cents. Pp. 71. Stanford University Press, 1923.

Economical aspects and legislation affecting losses in bread industry by staling.

MEDICAL DIAGNOSIS. For the Student and Practitioner. By Charles Lyman Greene, M.D., Chief of Staff, St. Luke's Hospital, St. Paul. Sixth edition. Cloth. Price, $12. Pp. 1468, with 723 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

Sixth edition of a systematic textbook of great popularity.

DIE HYPERTONIEKRANKHEITEN. Von Dr. Eskil Kylin, Direktor des Militärkrankenhauses in Eksjo, Sweden. Paper. Price, 8.40 marks. Pp. 168, with 22 illustrations. Berlin: Julius Springer, 1926.

Monograph on hypertension with little reference to recent American contributions.

LE CANCER. Contagiosité. Hygiène dans la défense contre le cancer. Par le Dr. M.-T. de Gérin, de la Faculté de médecine de Paris. Paper. Pp. 31. Paris: E. le Francois, 1925.

Brief popular French essay on cancer prevention.

THE AMERICAN BAKING INDUSTRY, 1849-1923. As shown in the Census Reports. By Hazel Kyrk, Ph.D., Associate Professor of Economics in the University of Chicago, and Joseph Stancliffe Davis, Ph.D., Director, Food Research Institute. Food Research Institute, Stanford University, California. Miscellaneous Publication No. 2. Paper. Price, $1. Pp. 108, with 10 charts. Stanford University Press, 1925.

COMBINATION IN THE AMERICAN BREAD-BAKING INDUSTRY. With Some Observations on the Mergers of 1924-25. By Carl L. Alsberg, Director, Food Research Institute. Food Research Institute, Stanford University, California. Miscellaneous Publication No. 3. Paper. Price, $1.50. Pp. 148. Stanford University Press, 1926.

LEHRBUCH DER SYSTEMATISCHEN ANATOMIE. Von Professor Dr. Julius Tandler, Vorstand der 1. anatomischen Lehrkanzel, Wien. 1. Band, Knochen-, Gelenk- und Muskellehre. Second edition. Paper. Price, 36 marks. Pp. 467, with 352 illustrations. Leipsic: F. C. W. Vogel, 1926.

SÉMÉIOLOGIE BILIAIRE. Par le Dr. Gaston Parturier, ancien interne des hôpitaux de Paris. Paper. Price, 30 francs net. Pp. 361. Paris: Gaston Doin & Cie, 1926.

LA ARTERITIS PULMONAR Y SU CUADRO CLÍNICO. Por F. C. Arrillaga. Paper. Pp. 274, with 53 illustrations. Buenos Aires, 1925.

Medicolegal

Expert Testimony—Statements to Examining Surgeon

(Johnson v. Bangor Ry. & Electric Co. (Me.), 131 Atl. R. 1)

The Supreme Judicial Court of Maine, in overruling the defendant's motion for a new trial after the plaintiff had obtained a verdict for damages for personal injuries, says that it was contended that the evidence so greatly preponderated in favor of the defendant that the court should be satisfied that the jury manifestly had erred, and that the damages were excessive. The argument was confined largely to the proposition that the jury had not given sufficient weight to the medical testimony in the light of the plaintiff's condition before the accident. It was conceded by medical experts on both sides that at the date of the injury the plaintiff was suffering from arthritis deformans. Still the writ alleged, and the medical testimony for the plaintiff tended to show, that he had sustained a fracture of the tenth dorsal vertebra. But the witnesses for the defendant denied that there were any indications of such fracture, and the defendant contended that the plaintiff had suffered no permanent injuries on account of the accident.

In considering a case so presented, it must be borne in mind that the testimony of the expert witnesses is only an expression of opinion, and is received on the theory that their special learning and skill may render their opinions of service to the jury; that thus the jury may obtain some assistance not otherwise available. The evidence may be stated as an assertion in the negative, as when a witness, examining a roentgen-ray film of the plaintiff's back, taken by another than the witness, asserts that he perceives no indication of a fracture; yet the testimony is but the expression of the witness' opinion, his interpretation of what this highly scientific aid to diagnosis shows; and its accuracy, or the weight to be given to it, is quite dependent on the skill of the operator who took the film, and the clearness which he obtained, as well as on the witness' own scientific skill. The assistance which testimony of this character—the court refers to expert testimony in general—may afford is, like other testimony, wholly for the consideration of the jury. The members of the jury may fairly come to the conclusion that none of it, or a part only, is entitled to weight in their deliberations. The testimony in this case well illustrated the limitations in the value of testimony of this kind. It was apparent that, after listening to the extended recital of the views of the expert witnesses, the jury did not lose sight of the fact that the plaintiff was seriously injured, a fact which it was fully justified in finding, without undertaking to determine the precise injury, if it believed the evidence submitted in his behalf. So finding, this court cannot say that the jury manifestly erred in the award of damages.

A witness called as an expert surgeon to testify in behalf of the plaintiff had examined the latter at the request of his attorneys in order to give an opinion relative to his injuries. The witness was allowed to state: "He described his accident, much as he has here. . . . Mr. Johnson's accident, as he described it to me, had been one in which he had been pitched onto his head and shoulders and his legs had been doubled up. . . ." The defendant objected to the admission of what the plaintiff told the surgeon relative to the happening of the accident, on the ground that the plaintiff's statement of such matters to the surgeon, who was examining him with a view to testifying as an expert witness and not for the purpose of treatment, was not admissible in evidence; but the evidence was admitted subject to the objection. It may be assumed that the surgeon's examination was made at some time subsequent to the injury, and that whatever the plaintiff said to him was narrative of a past event. Such statements by the plaintiff were clearly inadmissible as evidence of the facts stated. But it was very clear that the surgeon did not make the statements objected to for any such purpose. He examined the plaintiff that he might be in a position to give an opinion as to his injuries. It was very desirable, perhaps necessary, that he should obtain a history of the case. If the history which he obtained coincided with the facts as proved by competent evidence, his opinion would be entitled to a certain degree of weight; if his opinion was based on an erroneous history of the case, the basis of his opinion fell, and his opinion became of less weight. The exception, which is overruled, did not disclose an instance in which the plaintiff was endeavoring to support his case by incompetent evidence of the substantive fact which he alleged, under the guise of fortifying the opinion of an expert.

Death from Peritonitis After Injury to Hip and Leg

(Martin's Case (Me.), 130 Atl. R. 857)

The Supreme Judicial Court of Maine, in dismissing an appeal from an award of compensation by the chairman of the industrial accident commission, says that the husband of the claimant fell and received one or more traumatic injuries. Later, peritonitis developed, from which death resulted. The injuries set forth by the claimant in her petition as having resulted from the accident were to the hip. The evidence, however, also disclosed a cut or abrasion below the knee. There was no open wound at the hip. Against the award it was urged that it was not made sufficiently clear by the evidence to take it out of the realm of conjecture that the peritonitis, which was the immediate cause of death, was the result of the accident and not of disease. However, two reputable physicians, who attended the man during the last three weeks before his death while in a hospital, and who made careful examinations to determine the nature of the infection, performing an abdominal operation and after death a necropsy, gave as their unqualified opinion that the infection was not the result of typhoid fever or of other so-called internal causes, but was the direct result of the accidental injuries received. It may appear to the layman that the inference that the infection resulted from the injury to the hip was not a reasonable one, as there was no open wound as a source of infection; but one of the attending physicians gave it as his opinion that the injury below the knee was the original source of the infection. The case, however, was fully heard on evidence as to both injuries and their relation to the infection which resulted in the employee's death, and the court thinks that the chairman's findings had some competent evidence to support them, wherefore the appeal was dismissed.

Evidence Concerning Abortion by Former Physician

(Max v. People (Colo.), 240 Pac. R. 697)

The Supreme Court of Colorado, in affirming a judgment of conviction of defendant Max, says that he was sentenced to the penitentiary for a term of not less than twenty nor more than thirty years on a verdict of guilty of second-degree murder committed by performing an abortion which caused the death of a certain girl. He contended that there had been an erroneous admission of evidence. But to the general rule that evidence of independent crimes is inadmissible there are certain well recognized exceptions, one of which is that such evidence is admissible to show intent. Nor does the court know of any such rule in Colorado as that such evidence is inadmissible because it is the rule in the state that exceptions in a criminal statute need not be negatived. The mere fact that the people are not required to negative the exceptions does not make it error for them to do so, either in the charge or in the proof. Hence the admission of evidence that the defendant performed an abortion on another person ten days before he performed the one in question was proper to prove intent.

Another exception to the general rule is recognized when the plan or design of the accused is material because the specific act charged is a part of such plan or design and the proof of the latter has a strong tendency to establish the former. This defendant was charged with abortion, an offense ordinarily committed by one having some skill in certain branches of surgery. He had been admitted to practice, and had practiced medicine and surgery, and presumably had the required skill. His license had been revoked for the very offense here charged. Years afterward he was found still in the city, maintaining an office with equipment

for practice, and especially equipped to perform abortions, and only a few days before the date alleged in the information he was found committing the same kind of crime. The court thinks that the instant case thus clearly came within the exception which permits the proof of other offenses to show plan or design.

Under another general rule, mere memoranda are inadmissible in evidence, but an exception to this rule is recognized when such memoranda form part of the transaction which they tend to characterize and explain, and thus become a part of the res gestae (essential circumstances of the case). Therefore, when the defendant, in preparing to meet the charge against him, employed a man to manufacture evidence, and the man, in the course of that employment, kept memoranda relating to the defendant's instructions to him, his execution thereof, and his reports thereon, the memoranda were admissible in evidence as a part of the res gestae of the conspiracy which the people were presenting to the jury as a part of their proof of the defendant's guilt. Then, most of the evidence of preparation for the abortion and the visit of the girl to the office of the defendant on the date in question for the purpose of its performance was given by a woman with whom the girl lived, and consisted principally of the recitation by the witness of statements made to her by the girl. This evidence was clearly admissible.

The admission of evidence that the defendant's license to practice medicine had been taken from him and not restored was said by his counsel to be an attack on his character, and prejudicial error, because the defendant had not put his character in issue. This evidence was offered generally, and the only objection to it was that it was incompetent, irrelevant and immaterial. Hence, if admissible for any purpose, there was no error. If this court is correct in its first conclusion, then this evidence was admissible to negative the statutory exceptions, being proof that the defendant, if he performed the operation, could not have done so as "a physician or surgeon." Moreover, the very fact that one who keeps a physician's and surgeon's office, equipped with surgical instruments, especially instruments used in procuring abortions, and is visited by women seeking that service, has been a practicing physician and surgeon, but has been deprived of his license because of an illegal abortion, is, in the light of the established facts in the instant case, evidence tending to prove guilt. This office, these instruments, the other abortion referred to, the visit and purpose of the girl, all might be innocent of offense if relating to the conduct of one lawfully practicing medicine and surgery; but, relating to the conduct of one lawfully prohibited therefrom, they spell crime.

Taxation of Hospital's Separate Home for Nurses

(Johnson v. Mississippi Baptist Hospital (Miss.), 106 So. R. 1)

The Supreme Court of Mississippi, division B, in reversing a decree rendered for the complainant hospital, says that it was error to overrule the demurrer which Johnson, city tax collector, filed to the bill in which the complainant asked for an injunction against him to prevent a sale for taxes of certain lots on which was situated a house owned by the complainant and used in housing nurses in the employment of the hospital. Section 4251 of the code of 1906 provides that the following property shall be exempt from taxation: "(*d*) all property, real or personal, belonging to any religious or charitable society, and used exclusively for the purpose of such society and not for profit"; "(*f*) property appropriated to and occupied and used for any hospital or charitable institution." But when a hospital maintains a home for nurses who are employed in the service of the hospital, where they live when not on duty, which home for nurses is situated on a separate lot or on separate lots from that on which the "hospital" building is located, and such home for nurses is not used exclusively for the purposes of such hospital within the meaning of section 4251 (*d*), such property is subject to taxation. Nor is such property, used as a home for nurses, exempt from taxation under section 4251 (*f*).

Furthermore, although the hospital gives to such nurses employed by it a course of instruction in the proper nursing and treatment of patients, such property, used as a home for nurses, is not exempt from taxation under section 4252, which provides that all the property belonging to any religious or charitable society, where no dividends are declared and where the revenues thereof are used for benevolent purposes, shall be exempt from all state, county and municipal taxes. Nor is such property, used as a home for nurses, exempt from taxation under the provision of chapter 134 of the laws of 1922 that all property belonging to religious or charitable or benevolent organizations, which is used for hospital purposes and which maintains one or more charity wards that are for charity patients, and where all the income from said hospital is used entirely for the purposes thereof and no part of the same for profit, shall be exempt from all taxation.

In this court's view, the maintaining of a home for the nurses employed by the hospital and for other employees of the hospital is not a hospital purpose within the meaning of the statute. The statute contemplates such uses as are reasonably necessary to an effective discharge of the powers and duties of the hospital under its charter powers. It is not necessary, for the proper operation of a hospital, that the corporation should furnish homes for the nurses when not on duty. They are no different from other people who work and pay for board and lodging or furnish their own homes when off duty and performing no service necessary for the proper operation of a hospital. It would be an unwarranted distinction, by construction of the language of the statute, to hold that buildings used merely as a rooming house for employees come within the meaning of the statute. Therefore the court is of the opinion that the home for nurses and the lots on which it is situated, here under consideration, are subject to taxation.

Expenses of Health Officers in Attending Conventions

(Miller, State Revenue Agent, v. Tucker et al. (Miss.), 105 So. R. 774)

The Supreme Court of Mississippi says that the state revenue agent sued the defendants as members of the board of supervisors of Warren County to recover, on their several bonds, various amounts alleged to have been paid by the board without legal authority therefor. One item involved was an allowance of $222.26 to a physician, in December, 1920, as county health officer, for a trip to Washington to attend some meeting of a professional nature there. It was contended by the defendants that the warrant was properly allowed to the physician because it fell under the jurisdiction of the board under that clause giving the board jurisdiction "of all matters of county police." The court, however, thinks that the chancellor properly allowed the revenue agent to recover this item; and it affirms his action in reference thereto. The board of supervisors have no authority to pay the county health officer's expenses in attending conventions outside the county, and the board of supervisors are liable on their bond for an allowance for such officer for such purpose.

"Entirely Without Understanding"

(Fleming v. Consolidated Motor Sales Co. et al. (Mont.), 240 Pac. R. 376)

The Supreme Court of Montana says that the phrase "entirely without understanding," as used in section 5683 of the code of that state, which provides that "a person entirely without understanding has no power to make a contract of any kind," is construed, not as requiring proof of an entire lack of understanding on any subject, i. e., that the mind of the person is an absolute void, but such a degree of mental deficiency as to render him incapable of understanding a transaction of the nature involved. Proof that a person is of "unsound mind" is not sufficient to establish that he is "entirely without understanding," as the phrase is interpreted. Furthermore, if the purchase of a car which he did not need would brand a person as one "entirely without understanding," most of us have placed ourselves in the same category. In the absence of entire lack of understanding, and in the absence of fraud or imposition, there is no degree of mental weakness on the part of either of the contracting parties recognized in the law as vitiating a contract. The law does not presume to make a distinction between much and little intellect.

Society Proceedings

COMING MEETINGS

American Association of Industrial Physicians and Surgeons, Philadelphia, May 24-26. Dr. F. L. Rector, 22 East Ontario Street, Chicago, Secretary.
American Bronchoscopic Society, Montreal, Canada, May 29. Dr. Henry B. Orton, 671 Broad Street, Newark, N. J., Secretary.
American Child Health Association, Atlantic City, May 17-22. Dr. S. J. Crumbine, 370 7th Ave., New York City, Secretary.
American Dermatological Association, Philadelphia, May 27-29. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.
American Gynecological Society, Stockbridge, Mass., May 20-22. Dr. A. H. Curtis, 104 S. Michigan Ave., Chicago, Secretary.
American Laryngological Association, Montreal, Canada, June 3-5. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological, and Otological Society, Montreal, Canada, May 31-June 2. Dr. Robert L. Loughran, 145 West 58th Street, New York, Secretary.
American Neurological Association, Atlantic City, June 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.
American Ophthalmological Society, Hot Springs, Va., June 14-16. Dr. Emory Hill, Professional Building, Richmond, Va., Secretary.
American Orthopsychiatric Association, New York City, June 5-6. Dr. Karl A. Menninger, Mulvane Building, Topeka, Kansas, Secretary.
American Otological Society, Montreal, Canada, May 31-June 3. Dr. Harold Walker, 390 Commonwealth Avenue, Boston, Secretary.
American Pediatric Society, Niagara Falls, Canada, May 31-June 2. Dr. Howard Childs Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Psychiatric Association, New York City, June 8-11. Dr. Earl D. Bond, 4401 Market Street, Philadelphia, Secretary.
American Psychopathological Association, New York City, June 11. Dr. Sanger Brown II, 173 East 70th Street, New York City, Secretary.
American Roentgen Ray Society, Detroit, May 18-22. Dr. C. L. Martin, Baylor Hospital, Dallas, Texas, Secretary.
American Surgical Association, Detroit, May 24-26. Dr. R. B. Greenough, 8 Marlborough Street, Boston, Secretary.
American Therapeutic Society, Philadelphia, June 10-12. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C., Secretary.
American Urological Association, Boston, May 17-19. Dr. H. G. Hamer, 723 Hume-Mansur Building, Indianapolis, Ind., Secretary.
Arkansas Medical Society, Hot Springs, May 18-20. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Conference of State and Provincial Health Authorities, Atlantic City, N. J., May 21-22. Dr. Richard M. Olin, State Commissioner of Health, Lansing, Mich., Secretary.
Connecticut State Medical Society, New Haven, May 19-20. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
Illinois State Medical Society, Champaign, May 18-20. Dr. H. M. Camp, Lahl Building, Monmouth, Secretary.
Maine Medical Association, Poland Springs, June 10-12. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Springfield, June 8-9. Dr. W. L. Burrage, 182 Walnut Street, Brookline, Secretary.
Medical Library Association, Ann Arbor, Mich., June 8-9. Miss Harriet Wilson, 535 North Dearborn Street, Chicago, Secretary.
Minnesota State Medical Association, St. Paul, May 17-19. Dr. E. A. Meyerding, 11 W. Summit Avenue, St. Paul, Secretary.
Missouri State Medical Association, St. Louis, May 17-20. Dr. E. J. Goodwin, 901 Missouri Building, St. Louis, Secretary.
National Association for the Study of Epilepsy, New York City, June 7-8. Dr. A. L. Shaw, 108B The Albiston, Utica, N. Y., Secretary.
New Hampshire Medical Society, Concord, May 25-26. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 17-19. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.
New Mexico Medical Society, Albuquerque, May 19-21. Dr. C. M. Yater, 310 N. Richardson Avenue, Roswell, Secretary.
North Carolina, Medical Society of the State of, Wrightsville Beach, June 15-17. Dr. L. B. McBrayer, Southern Pines, Secretary.
North Dakota State Medical Association, Minot, May 25-26. Dr. A. J. McCannel, Minot, Secretary.
Oklahoma State Medical Association, Oklahoma City, June 22-24. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
South Dakota State Medical Association, Aberdeen, May 19-20. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association of, Houston, May 24-27. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.
West Virginia State Medical Association, Morgantown, May 25-27. Mr. S. O. Neale, 211 Smallridge Building, Charleston, Executive Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Twentieth Annual Meeting, held at New York, March 30-April 1, 1926

(Continued from page 1478)

Etiology of Postoperative Pneumonitis

DR. ALLEN O. WHIPPLE, New York: There are three fairly well defined pathologic processes in the production of postoperative pulmonary complications: (1) aspiration of infected secretions; (2) pulmonary infarction, and (3) atelectasis. No one of these three processes can be considered as the sole etiologic factor. In 1915-1916, at the Presbyterian Hospital, the incidence of pneumonitis was 2.3 per cent in 3,217 operative cases; in 1924 it was 2 per cent, and in 1925 it was 1.4 per cent. This is in large measure due to the fact that we have advised consistently against abdominal operations during the late winter and spring when respiratory infections are most prevalent. These figrues prove that elimination of respiratory infection before the abdominal operation is not to be overlooked.

DISCUSSION

DR. WILLIAM D. JOHNSON, Batavia, N. Y.: With regard to the factors in the production of postoperative pulmonary complications, I feel just the way Dr. Whipple does, that no one thing is to be given great predominant consideration. If a patient comes in who has been in the habit of wearing his underwear to bed, we will let him do it. Many years ago I was told that the way to avoid postoperative pneumonia was to put on a mustard plaster as soon as the patient was back in bed, and that is routine. In every case of abdominal operation a jacket of mustard is put on until the skin gets as red as a baby's lips. The portable roentgen-ray machine will tell if there is massive collapse of the lung, which occurs in a greater percentage of cases than one thinks. We have made it a routine to make a roentgen-ray examination with the portable machine as soon as the patient is awake in cases in which we suspect massive collapse. The patient with actual massive collapse of the lungs is got up into a chair within twenty-four hours of the time of the operation and made to breathe deeply. My anesthetist is afraid of deep anesthesia, and I of light anesthesia. As a result of all these things, we have not had a case of massive collapse in the last year. Prevention is the important thing.

DR. WILLY MEYER, New York: One of the elements causing postoperative pneumonitis and very frequently death is aspiration, which occurs sometimes during operation even in the hands of an expert, and particularly toward the end of the operation and right after it during the return of the patient to bed. For many years we have insisted on placing the patient on the stretcher in a pronounced Sims posture. When he then vomits, aspiration cannot occur; the gastric contents must run out the lower angle of the mouth. The patient is placed in the same position in bed, provided there is no contraindication. In Bier's surgical clinic in Berlin, investigation has been made on patients suspected of developing lung complications. They take 8 minims (0.5 cc.) of ether, mix it with 8 minims of sterile oil and a few drops of a local analgesic, and inject it into the gluteal muscles once in twenty-four hours, from three to five days in all. As in colonic anesthesia, the ether is bound up with oil and given off slowly in the body—a better procedure than to inject plain ether. The result is a mild hyperemia of the bronchial mucosa, which represents the curative agent. Of 187 patients just beginning to show lung complications, 185 did not develop pneumonia.

DR. HENRY KELLER, New York: One of the important measures in the treatment of postoperative pneumonitis, as well as an effective preventive of pneumonitis as a postoperative complication, is the application of diathermy to the chest region. In robust patients the diathermy pads can be applied soon after the operation is completed, and as soon as the patient is returned to bed the pads and the application of the current can be continued for a number of hours. On the other hand, in cases considered bad surgical risks, the application of diathermy can be commenced prior to the operation, and continued during the operation and for a number of hours following the operation.

DR. JOHN A. LICHTY, Clifton Springs, N. Y.: In considering cases of postoperative pneumonitis there should be active team work on the part of surgeon, internist and pathologist. I believe that the diagnosis of postoperative pneumonitis is made more frequently than it should be. Statistics on postoperative pneumonitis are misleading unless the diagnosis is verified by a necropsy. With reference to the prophylactic treatment against postoperative pneumonia, the suggestions given by Dr. Whipple and Dr. Johnson are interesting and yet I believe it is difficult to determine just how much good all these procedures and findings accomplish, largely because in the various epidemics of colds, grip, etc., which are characterized by the frequency of postoperative pneumonitis, the character of the micro-organisms differs. Any measures that might have to be instituted when the epidemic is mild might show good results, whereas a much

better method instituted when the epidemic is severe might not give as good results as it would otherwise.

DR. MALCOLM ROSE, New York: Drowning people with ether has a good deal to do with putting their lungs in good condition for the development of pneumonia.

DR. ALLEN O. WHIPPLE, New York: An important prophylactic measure to be used against the development of pulmonary emboli is careful handling of the tissues, avoiding injury of the large venous channels in such areas as the rectus muscle. I agree that the majority of statistics on the subject are not of a great deal of use. I am glad to hear that you cannot demonstrate all these cases by necropsy. I think ether has been blamed entirely too much for these complications and that the term "ether pneumonia" is a misnomer.

Pulmonary Abscess and Its Treatment

FROM THE SURGICAL STANDPOINT

DR. ADRIAN V. S. LAMBERT, New York: The crux of the successful treatment of lung abscess may be summed up by the one word drainage, and in the management of any given case the problem is to effect adequate drainage. In our entire series of cases about 50 per cent of the patients recovered completely under the more conservative forms of treatment without operation. The exact time at which to drain a lung abscess through the chest wall is when the zone of exudative inflammation has been reduced to a minimum and the central cavity is surrounded by a series of collapsed vesicles, representing a more or less discrete wall. It is most important to establish its exact location with accuracy and, if possible, the point at which it is nearest the chest wall. Abscesses situated near the hilum are the most difficult to drain by incision, but fortunately recovery usually occurs without operation. The use of the aspirating needle on the unopened chest in order to establish the diagnosis is an unjustifiable procedure, because of the danger of establishing an empyema. After the abscess has been opened, it should be explored with the finger and the opening enlarged so that the drainage may be placed at its most dependent portion. As a drain I use a collapsed cigaret drain covering without any contained gauze and place a rubber tube of large caliber and soft texture just inside the abscess wall, leading the cigaret covering to the surface through its lumen. The incisions of the superficial layers of the chest wall are packed with iodoform gauze about the tube. This acts as an excellent protective against infection. The patient is kept on his operated side until he has completely established his respiratory equilibrium and emptied his bronchial tree of contained secretion. Drainage must be maintained until the roentgen ray shows a complete clearing of the surrounding lung and a granulating tract is established.

FROM THE MEDICAL STANDPOINT

DR. JAMES ALEXANDER MILLER, New York: In the treatment of pulmonary abscess, absolute rest is extremely important, not only during the time when the patient has fever, but afterward. Within a week or so, if the patient is in bed, even though the amount of expectoration is considerable, the fever will subside and the patient is better. This rest in bed during the whole period of the suppurative process is of extreme importance. While the patient is kept at rest, we try to facilitate drainage by the use of posture. We invert our patients over the foot of the bed, with the hands on the floor, so that the abscess side is up. The logical position is not always the one in which the patient drains best, and we have to experiment to find which is the best way. A patient will be relieved for several hours by emptying the abscess by this posture. This is carried out three or four times a day. This, in connection with absolute rest in between, is our fundamental treatment for a period of time sufficient to demonstrate whether or not additional methods are necessary to cure the patient. If the patient does not do well on a regimen of rest and posture, the question of bronchoscopy is considered. We do not agree that bronchoscopy is in all cases of abscess the method that should be tried immediately, because it is not as simple and harmless a thing as it is sometimes described to be. Another method of treatment which we have used and which is widely discussed in the literature is artificial pneumothorax. We have not had favorable results with it in pulmonary abscess. The treatment may do real harm either by rupturing adhesions, and thus causing acute empyema, or by compressing the draining bronchus, thus cutting off the drainage.

DISCUSSION

DR. HOWARD LILIENTHAL, New York: It may possibly be necessary in treating multiple abscesses of the lung to use thoracoplasty. Fifty per cent of these patients will get well spontaneously, but the remaining 50 per cent will die if not operated on, and operated on at the right time. But this does not mean that the ordinary lung abscess is a question of an emergency. It usually is not. If one makes the diagnosis before there is a bronchial connection, and then operates, the patient will recover very promptly, because every expulsive respiratory effort tends to force the abscess walls together. When an abscess is opened and is found to connect with a part of the bronchial tree, it is best to maintain the bronchial fistula for a long time. Operative dangers not detailed are: hemorrhage from erosion of vessels and cerebral air embolism. This is probably the cause of what is called pleural shock. Postoperative rest is of great value.

DR. JOHN D. KERNAN, New York: Bronchoscopy should be done at least once in every case of lung abscess on account of the possibility of the presence of a foreign body, and because of the possibility of a cure after one bronchoscopy. No matter how unfavorable the case appears for bronchoscopy, it is sometimes possible to get astounding results.

Bronchopulmonary Spirochetosis

DR. DAVID T. SMITH, Ray Brook, N. Y.: In the nineteen cases seen at Ray Brook, spirochetes, fusiform bacilli and cocci have been found in every case. Many more cases must be studied, and the organisms must be isolated in pure culture and the disease reproduced in animals before it can be said definitely that they are the etiologic agents. The routine method of treatment in these cases has been rest in bed and postural drainage. During the last year, injections of neoarsphenamine have been given in addition, with improvement in some cases. The success of the treatment depends largely on the duration of the disease. Most of the cures have been obtained in cases of less than six months' standing.

Chronic Pancreatitis

DR. J. WILLIAM HINTON, New York: Cases of chronic interstitial pancreatitis are not cured, nor are subsequent attacks prevented, by biliary drainage, as the symptoms are due to a lymphatic infection secondary to a primary abdominal focus, most often a lesion of the gallbladder, and second, an ulcer of the duodenum. The diagnosis should be made in a higher percentage of cases from the history and clinical data without an exploratory laparotomy. The infection seems to be a lymphangitis which spontaneously subsides after removal of the primary abdominal focus.

DISCUSSION

DR. CHARLES GORDON HEYD, New York: The statistics furnished by all large clinics on the association of pancreatitis with gallbladder infection would support the assumption that this association does exist. It would appear logical, therefore, to suppose that there must be symptoms produced by a chronic pancreatitis which remain after the original focus of infection has been removed. Most of the cases of residual pancreatitis clear up spontaneously within a reasonable time without the necessity for any further operative intervention.

DR. ANTHONY BASSLER, New York: The test I devised will show with very little liability of error if a definite condition in the pancreas exists by the simple method of testing the external secretions. We judge our operative cases entirely on the results of this test, and even in chronic cholecystitis we have been able to get a very high percentage of definite stiffening in the pancreas found at operation; and in those cases in which there is a chronic cholecystitis with stiffness there is no question that the gallbladder should be removed. The method is also helpful in operative cases which come back with symptoms to draw attention to the involvement of the pancreas and the relief of those symptoms by various methods of pancreatic feeding.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

171: 157-312 (Feb.) 1926

*Vascular Changes in Cases of Polycythemia Vera. G. E. Brown and H. Z. Giffin, Rochester, Minn.—p. 157.
Experimental Coronary Embolism. W. W. Hamburger, W. S. Priest and R. B. Bettman, Chicago.—p. 168.
*Spontaneous Rupture of Heart. F. R. Nuzum and H. J. Hagen, Santa Barbara, Calif.—p. 185.
*Subacute Combined Degeneration of Spinal Cord and Pernicious Anemia. H. H. Reese and S. K. Beigler, Madison, Wis.—p. 195.
Pressure Changes in Biliary Tract. J. C. Potter and F. C. Mann, Rochester, Minn.—p. 202.
*Substernal Thyroid. D. Felberbaum and B. Finesilver, New York.—p. 217.
*Prognosis in Exophthalmic Goiter. J. M. Read, San Francisco.—p. 227.
*Total Thyroidectomy in Thyrotoxicosis of Exophthalmic Type. P. K. Gilman and W. E. Kay, San Francisco.—p. 239.
Diagnostic Criteria of Chronic Parathyroid Insufficiency: Phosphate Content of Blood. L. Berman, New York.—p. 245.
*Primary Carcinoma of Lung. J. S. Grove, Chicago, and S. E. Kramer, Perth Amboy, N. J.—p. 250.

Vascular Changes in Polycythemia Vera.—Fourteen cases of polycythemia vera were studied by Brown and Giffin in relation to the vascular readjustments to the increased volume of the circulating blood. The total volume of the circulating blood and its viscosity were increased in all cases. The capillaries of the nail fold showed engorgement of the venous limb in thirteen cases; of the arterial limb, in four cases. There was complete utilization of all available capillaries of the skin. Engorgement of the retinal veins was present in nine cases. Cardiac enlargement and cardiac disease were noticeably absent. The liver was slightly enlarged in 57 per cent of cases. The spleen was enlarged in every instance, and there was a distinct relationship between the splenic enlargement and the degree of increase in the total volume of the blood. There was no increase of blood pressure in polycythemia vera. The renal function was slightly impaired.

Spontaneous Rupture of Heart.—Nuzum and Hagen have collected 320 instances of heart rupture from the literature and add five cases from their own material, classifying the symptoms according to their incidence and giving particular attention to the etiology and pathology. They assert that this condition most frequently follows obstruction of a coronary artery. Coronary thrombosis invariably results in infarction of that portion of the heart wall supplied by the obstructed vessel. Proper management of such a patient will aid in preventing a rupture of the infarcted area.

Pernicious Anemia and Spinal Cord Degeneration.—At least four of the cases of pernicious anemia reported by Reese and Beigler presented some form of neurologic manifestation. It appears that the loss of vibratory sense is almost invariably the earliest sign of neural changes in pernicious anemia, and not infrequently a diagnosis of the disease and subsequent development of cord changes were predicted in spite of a normal blood picture. Cord changes may precede the characteristic blood picture of pernicious anemia, and in such cases the progress of the disease is more rapid, remissions are less frequent and prognosis more serious. Neurologic manifestations are apparently limited to the cord, particularly involving and causing marked tract degeneration of the spinocerebellar and posterior column tracts.

Substernal Thyroid.—Felberbaum and Finesilver call attention to the frequency of occurrence of substernal thyroid and report seven cases. Any shadow in the upper mediastinum, which shows a distinct line of demarcation, and is separate from the aorta, is usually a retrosternal goiter.

Prognosis in Exophthalmic Goiter.—The mortality rate in Read's series of 100 cases was 11 per cent. Exclusive of four deaths directly due to surgery, the mortality rate was 7.3 per cent, and, further deducting three accidental deaths, it was 4.3 per cent. Thirty-eight per cent of patients seem to be cured and about 21 per cent are sufficiently improved as to be restored to full social and economic usefulness. The remaining 30 per cent, which includes twenty-three of twenty-five patients previously operated on, will be sufferers from the disease or its sequelae the remainder of their lives. The tendency for this disease to become chronic in certain instances is a feature which Read feels had not been stressed sufficiently.

Total Thyroidectomy in Exophthalmic Thyrotoxicosis.—Ten patients form the basis of the preliminary report made by Gilman and Kay. Of these, seven had been under continuous medical supervision, including the usual methods indicated by that term, for from one to eight years. Each of these seven had received numerous roentgen-ray treatments, two patients as many as sixty treatments. The operation consisted in removing the entire thyroid gland, the safety of the parathyroids and recurrent laryngeal nerves being insured by shaving the posterior portion of each lateral lobe as close to the capsule as possible. All but two patients received iodine both before and after operation. The results have been most gratifying. After long periods of complete invalidism the patients have resumed their usual occupations and enjoy good health.

Primary Carcinoma of Lung.—Twenty-four cases of primary carcinoma of the lung are analyzed by Grove and Kramer. The striking increase in the number of tumors of the lung since the influenza epidemic suggests some relation between these two conditions. Pulmonary cancer presents a very varied pathologic picture. Metastases occur early and are very widespread. Histogenesis presents many difficulties, because of the morphologic variations in the cells concerned and the difficulty in obtaining the tumors in the early stages for study. Efforts to classify these tumors as to histogenesis admit great probability of error. However, from authentic studies it appears that origin from bronchial mucosa is most frequent and that origin from alveolar epithelium is very rare. There are no pathognomonic symptoms of tumor of the lung—weakness, cough, expectoration, pain in the chest and dyspnea being most important. The use of the bronchoscope for both diagnosis and treatment is advocated.

American Journal of Syphilis, St. Louis

10: 1-200 (Jan.) 1926

Sudden Death Due to Exacerbation of Latent Syphilitic Myocarditis. A. S. Warthin, Ann Arbor, Mich.—p. 1.
*Bismuth Treatment for Syphilis. I. C. Sutton, Los Angeles.—p. 29.
Generalized Cutaneous Syphilis: Clinical Differentiation. III. Frambesia Tropica and Syphilis. H. Goodman, New York.—p. 64.
*Acute Syphilitic Nephritis: Case. A. J. Hood and F. D. Murphy, Wauwatosa, Wis.—p. 89.
Case of Cerebrospinal Syphilis Treated by Inoculation with Malarial Parasites. E. C. Thrash, Atlanta, Ga.—p. 94.
*Pregnancies as Factor in Prevention of Neurosyphilis. H. C. Solomon, Boston.—p. 96.
Standardization of Wassermann Test. R. Gilbert and V. Langworthy, Albany, N. Y.—p. 101.
Sachs-Georgi Reaction. G. Stuart and K. S. Krikorian, Palestine.—p. 131.
Wassermann Test for Syphilis: Natural Antisheep Amboceptor in Human Serum. O. Ishii, New York.—p. 143.
Comparison of Fixation at 37 C. and 36 C. with Cholesterinized Antigen. R. Gilbert, V. Langworthy and A. C. Moore, Albany, N. Y.—p. 162.

Bismuth Treatment of Syphilis.—Sutton concludes that bismuth has not dethroned arsenic, which still holds first place because of its powerful action on spirochetes, but it is particularly indicated in cases of intolerance to the arsenical preparations and in those who may be said to be arsenic fast. It constitutes, therefore, "a great progress in the treatment of syphilis."

Acute Syphilitic Nephritis.—The case reported by Hood and Murphy appears to be one of true syphilitic nephritis, because it occurred during the secondary stage of untreated syphilis, and no other known cause for the nephritis could be found.

Pregnancy as Factor in Prevention of Syphilis.—The history of pregnancy in 559 syphilitic women, 30 years of age or older,

was studied by Solomon. About 44 per cent of the women with paretic and tabetic neurosyphilis were nullipara in comparison with 26.5 per cent of nullipara among the women who had syphilis but no evidence of nervous system involvement. Pregnancies were considerably more frequent among the nonnervous system syphilitic patients than among the neurosyphilitic patients. Solomon says that one might draw either of two conclusions: first, that women who develop neurosyphilis become less fertile than women infected with syphilis but without central nervous system involvement, either because the former have a more severe type of infection or because they are infected with a different type of organism, namely, a neurotropic strain which tends to affect the child-bearing potentialities of the individual; or, second, that women who become pregnant receive thereby a protection against the spirochete and its attack on the nervous system.

Annals of Surgery, Philadelphia

83: 321-448 (March) 1926

*Invasion of Intracranial Venous Sinuses by Meningioma (Dural Endothelioma). E. B. Towne, San Francisco.—p. 321.
*Giant Cell Tumor Involving Phalanges. W. H. Cole, St. Paul.—p. 328.
Periarterial Sympathectomy: Three Cases in Which It Failed. N. Winslow, Baltimore.—p. 333.
Glossopharyngeal Neuralgia and Its Surgical Relief. A. O. Singleton, Galveston, Texas.—p. 338.
Questions Involved in Operative Procedures in Cases of Gastric and Duodenal Ulcers. A. Schachner, Louisville, Ky.—p. 345.
Healing of Gastric Ulcer in Man. H. D. Caylor, Rochester, Minn.—p. 350.
*Carcinoma of Right Segment of Colon. C. H. Mayo and W. A. Hendricks, Rochester, Minn.—p. 357.
*Colonic Polyposis with Engrafted Malignancy. R. C. Coffey, Portland, Ore.—p. 364.
*Hemostasis in Suprapubic Prostatectomy. V. C. Hunt, Rochester, Minn.—p. 380.
Arthrotomy for Knee-Joint Calculi. J. J. Moorhead, New York.—p. 392.
*Primary Pneumococcus Peritonitis. R. A. Leonardo, Rochester, N. Y.—p. 411.

Meningioma.—Two cases are reported by Towne. In one, the superior longitudinal sinus was occluded. In the second, a meningioma had invaded the inferior longitudinal sinus and grown extensively in the venous system, terminating in the superior vena cava. The tumor had secondarily invaded and broken through the venous walls in many places.

Giant Cell Tumor of Phalanges.—Two cases of benign giant cell tumor of the phalanx are reported by Cole. The first of these involved the proximal phalanx of a toe, and was cured five and one-half years after amputation. The second involved the proximal phalanx of the thumb. This patient was well sixteen months after the phalanx was resected and replaced by a bone graft from the tibia, driven into the metacarpal head. The result is a stiff, but very serviceable, thumb.

Carcinoma of Colon.—In ten years, 257 patients with carcinoma of the right segment of the colon were advised to undergo operation at the Mayo Clinic. Of these, 141 are known to be dead, a few of which, however, did not die from carcinoma. Thirty-four patients were not traced. Fifty-five patients lived from one to four years; twenty-five lived from six to eight years; twelve are alive from eight to nine years after operation.

Colonic Polyposis.—Coffey reports one case of colonic polyposis with engrafted malignancy and describes a technic for removing the entire colon including the rectum.

Hemostasis in Suprapubic Prostatectomy.—In Hunt's experience, the Pilcher bag offers a most effective method of hemostasis after suprapubic prostatectomy.

Primary Pneumococcus Peritonitis.—Three cases of primary pneumococcus peritonitis are reported by Leonardo, in none of which was infection by way of the genitalia possible. In one of these cases trauma was a possible etiologic factor.

Archives of Physical Therapy, X-Ray, Radium, Omaha

7: 65-125 (Feb.) 1926

Therapeutic Exercise: Neglected Method in Physiotherapy. J. C. Elsom, Madison, Wis.—p. 65.
Status of Radiotherapy in Ophthalmology and Otolaryngology. I. O. Denman, Toledo, Ohio.—p. 73.
Treatment of Ulcerations by Ultraviolet Ray. A. Krohn, Detroit.—p. 84.
Fistulas and Sinuses. M. J. Breuer, Lincoln.—p. 94.

Arkansas Medical Society Journal, Little Rock

22: 217-228 (March) 1926

Case of Cyst of Broad Ligament. R. C. Dorr, Batesville.—p. 217.
What May Be Expected from Use of Intravenous Antiseptics in Treatment of Septicemias. J. Thibault, Scott.—p. 217.
Business Side of Practice of Medicine. A. McLeod, Glen Allen.—p. 221.

California and Western Medicine, San Francisco

24: 289-432 (March) 1926

Prostatic Obstruction. G. G. Reinle, Oakland.—p. 324.
*Relation of Protein Foods to Hypertension. A. N. Donaldson, Loma Linda.—p. 328.
*Value of Orange Juice as Accessory Food. J. T. Melvin, Porterville.—p. 331.
*Renal Counterbalance. F. Hinman, San Francisco.—p. 333.
Bilharzia Disease: Cure by Tartar Emetic. W. B. Palamountain, Oakland.—p. 335.
Reasons for Early Treatment of Squint. M. F. Weymann, Los Angeles.—p. 338.
Radiotherapy of Nonmalignant Conditions. F. Williams, San Francisco.—p. 340.
Gastric and Duodenal Ulcer. J. A. Mattison, Los Angeles.—p. 342.
Significance of Growth Deviations in Children. C. L. Lowman, Los Angeles.—p. 345.
Skin Lesions as Diagnostic Aids in General Medicine. H. J. Templeton, Oakland.—p. 348.
Virulent Surgical Infections. W. H. Barnes, Oakland.—p. 349.
Lupus Erythematosus Acutus Disseminatus. F. B. Clarke and A. W. Warnock, Los Angeles.—p. 354.
Intestinal Protozoiasis. A. Bonthius, Pasadena.—p. 357.

Relation of Protein Foods to Hypertension.—The results of this study by Donaldson support the suggestion that hypertension may have its beginnings in a type of dietary that produces such a degree of endocrine stimulation as to develop an irritable vasomotor system with its resulting transitory, then permanent, alteration in blood pressure.

Orange Juice as Accessory Food.—Melvin believes that the regular administration of orange juice with children's meals is an important factor in their improved health, and promotes gain in weight.

Renal Counterbalance.—Hinman says that it is a popular conception that the remaining kidney, if normal, is able immediately to take over the extra burden occasioned by removal of its mate. On closer consideration this is found to be only partially true, and renal reserve is seen to be largely potential and to have an anatomic and functional correlation. Studies of structure have shown that growth by hyperplasia or new tissue formation may occur in young animals and man for considerable periods after birth; in human kidneys, up to the fifth or sixth year. Renal atrophy has been almost universally regarded by pathologists as degenerative in type and due to bacterial, chemical or other toxins, producing the well recognized pathologic condition of cloudy, swelling, and fatty amyloid and hyaline degeneration. But there is also a well recognized type of atrophy which may be termed biologic, due to inanition, pressure or inactivity, and it is possible experimentally to produce what would seem to be an inactivity renal atrophy. For clinical purposes, one may distinguish four groups of renal tissue relative to the adjustments that may follow surgery or disease. Readjustments between these four types of tissue lead to four types of counterbalance. The normal renal tissue may show a complete unilateral counterbalance. Readjustments among portions which have an equal qualitative ability to respond instance a cooperative type of counterbalance, whereas readjustments between portions of unequal qualitative ability, irrespective of quantity mass, result in a competitive type of counterbalance.

Illinois Medical Journal, Oak Park

69: 89-176 (Feb.) 1926

Prophylactic Blood Transfusion as Routine Measure in Poor Operative Risks. G. G. Ward, New York.—p. 101.
Interests of Medical Profession Now Before Our State Legislature. J. R. Neal, Springfield.—p. 103.
Case of Ovarian Pregnancy with Histologic Findings. M. Thorek, Chicago.—p. 106.
Idiopathic Ulcerative Colitis. A. H. Logan, Rochester, Minn.—p. 111.
Acute Lymphatic Leukemia: Relation to Minor Surgical Procedures; Case. H. J. Isaacs, Chicago.—p. 116.
Managements of Peptic Ulcer, Gastric and Duodenal. A. E. McEvers, Rock Island.—p. 118.
Diathermy in Genito-Urinary Diseases. V. J. O'Conor, Chicago.—p. 123.

Some Things Public Ought to Know About Scientific Medicine. Why Not Tell Patient About Disease That Kills Him? W. F. Grinstead, Cairo.—p. 125.
Nervous Patient and General Practitioner. M. Solomon, Chicago.—p. 127.
Hay-Fever in Chicago Territory. H. L. Huber, Chicago.—p. 133.
Oral Mycosis: Case. D. W. Day, Rockford.—p. 138.
Is Malaria Etiologic Factor in Iritis? R. C. Matheny, Galesburg.—p. 139.
Public Health Work as Viewed by One in General Practice of Last Quarter of Century. J. S. Templeton, Pinckneyville.—p. 142.
Hemochromatosis in Woman. F. W. Moeller and J. H. Hutton, Chicago.—p. 146.
Surgical Physiology of Pancreas. W. J. Hurley, Chicago.—p. 148.
Pellagra: Case. C. G. Appelle, Champaign.—p. 150.
Treatment of Fibroids. W. C. Danforth, Evanston.—p. 152.
Prognosis of Intracranial Tumors. L. Davis, Chicago.—p. 156.
Amebic Dysentery. A. A. Goldsmith, Chicago.—p. 160.
Changing Aspects of Dermatologic Practice. E. P. Zeisler, Chicago.—p. 163.
Ludwig's Angina: Twenty-Three Cases. C. F. Yerger, Chicago.—p. 168.

Indiana State Medical Association Journal, Ft. Wayne

19: 93-134 (March) 1926

*Acute Rheumatic Fever. L. G. Heyn, Cincinnati.—p. 93.
*Volvulus of Fallopian Tube. W. E. Gabe, Indianapolis.—p. 98.
Divergent Strabismus. B. W. Egan, Logansport.—p. 101.
Pelvic Infections, Especially Salpingitis. T. J. Strong, Peru.—p. 108.
Reconstruction Work in Middle Life. S. P. Scherer, Martinsville.—p. 113.

Acute Rheumatic Fever.—In sixty cases of rheumatic fever reviewed by Heyn, there were eighty-six cardiac complications. Chronic myocarditis and mitral and aortic insufficiency were the most frequent complications, occurring in twenty-three, twenty-one and twenty cases, respectively.

Volvulus of Fallopian Tube.—Gabe reports a case of volvulus of the fallopian tube occurring in a girl, aged 15. The abdomen was opened under a diagnosis of acute appendicitis. There did not appear to be any preceding pathologic change. Gabe says that a preoperative diagnosis of this condition has never been made in reported cases.

Journal of Bacteriology, Baltimore

11: 75-151 (Feb.) 1926

Study of Bacillus Acidophilus from Digestive Tract of Calves. M. L. Orcutt, Princeton, N. J.—p. 115.
Study of Enterococci from Digestive Tract of Calves. M. L. Orcutt, Princeton, N. J.—p. 129.
Use of Potassium Tellurite in Differential Culture Medium. R. Gilbert and E. M. Humphreys, Albany, N. Y.—p. 141.

Journal of Clinical Investigation, Baltimore

2: 213-298 (Feb.) 1926

*Total Acid-Base Equilibrium of Plasma in Health and Disease. VII. Factors Concerning Acidosis in Chronic Nephritis. H. A. Bulger, J. P. Peters, A. J. Eisenman and C. Lee, New Haven, Conn.—p. 213.
*Extrinsic Nervous Control of Auricles and Ventricles in Complete Auriculoventricular Block in Man. A. C. De Graff and S. Weiss, New York.—p. 227.
*Effect of Changes in Regimen on Urinary Alkaline Tides in Normal Individual. M. Muschat, Philadelphia.—p. 245.
*Excretion of Ammonia and Titratable Acid in Nephritis. D. D. Van Slyke, G. C. Linder, A. Hiller and J. F. McIntosh, New York.—p. 255.
*Effect of Iodine by Mouth on Reaction to Intravenous Injections of Thyroxin. C. C. Sturgis, S. Zubiran, G. W. Wells and T. Badger, Boston.—p. 289.

Factors Concerning Acidosis in Chronic Nephritis.—Bulger and his associates are of the opinion that a reduction of total base and an increase of undetermined acids are the most significant factors causing acidosis in chronic interstitial and arteriosclerotic nephritis, phosphate playing a somewhat less important rôle. The degree of acidosis appears to be greatly influenced by variations of plasma chloride. Frequently, especially in the presence of vomiting, chloride may be quite low, thus freeing the base to combine with bicarbonate and resulting in only a slight reduction of carbon dioxide. With high chloride, bicarbonate may be extremely low. These studies emphasize the profound changes which occur in the blood electrolytes in the terminal stages of chronic nephritis.

Nervous Control in Heart Block.—Evidence is presented by De Graff and Weiss to show that in complete heart block the accelerator nerves exert a considerable control over the ventricles, whereas the vagi have only a slight influence. Vagal control over the auricles is the same in complete heart block as in the normal heart. Exercise in complete heart block tends to increase the auricular rate but leaves the ventricular rate unchanged. Cheyne-Stokes breathing in complete heart block may be associated with varying auricular and ventricular responses. A case is reported in which the injection of epinephrine caused a complete change in direction of the ventricular complexes.

Rhythm in Urinary Acidity.—The observations made by Muschat suggest a rhythm in urinary acidity characteristic for the individual and persisting in spite of marked variations in the individual's regimen.

Ammonia and Acid Excretion in Nephritis.—In those forms of nephritis (nephrosis and benign nephrosclerosis) in which the urea excreting function is quantitatively unimpaired, Van Slyke et al. found that both ammonia and titratable acid are excreted in normal amount and proportion. In acute glomerulonephritis a tendency to low ammonia-acid ratios was present in some cases, and absent in others. In those forms of nephritis with quantitatively impaired urea concentrating function (chronic glomerulonephritis and some cases of acute glomerulonephritis), there was regularly a low ammonia-acid ratio. The drop in the ammonia-acid ratio was not always proportional to the fall in urea excreting power nor to the severity of the clinical condition. The ammonia content of the blood was as low or lower in those forms of nephritis with diminished ammonia output as in normal individuals. The concurrence of diminished ammonia formation with diminished kidney function is compatible with the conclusion of Nash and Benedict that ammonia is formed in the kidney. The fall in the ratio, however, although present in all cases thus far observed with impaired urea concentrating power, does not regularly parallel the fall in the urea concentrating or excreting power. The decrease in urea function is more closely correlated with the clinical severity of the nephritis.

Effect of Iodine on Thyroxin.—Sturgis et al. assert that the intravenous injection of thyroxin in rabbits produces a characteristic increase in the pulse rate, basal metabolism and decrease in the body weight. The administration of compound solution of potassium iodide has no effect in altering the characteristic response in rabbits to injections of thyroxin.

Journal of Infectious Diseases, Chicago

38: 193-280 (March) 1926

Bacterial Metabolism. LXXVI. Nature of Soluble Proteolytic Enzyme of B. Proteus. A. I. Kendall and H. R. Keith, St. Louis.—p. 193.
Id. A. I. Kendall, St. Louis; A. A. Day and A. W. Walker, Chicago.
*LXXVII. Chemistry of Intestinal Flora of Nurslings.—p. 200.
*LXXVIII. Chemistry of Intestinal Bacteria of Artificially Fed Infants.—p. 205.
*LXXIX. Chemistry of Intestinal Flora of Normal Adults.—p. 211.
LXXX? Chemistry of Intestinal Flora of Man Containing Abnormal Numbers of Gas Bacilli.—p. 217.
Fate of B. Typhosum and Other Organisms in Segregated Vein and in General Circulation of Normal and Immunized Rabbits. R. G. Mills and G. M. Dack, Chicago.—p. 222.
Effect of Certain Substances on Precipitin Reaction. C. M. Downs and K. Goodner, Lawrence, Kan.—p. 240.
Experimental Method for Study of Bacterial Flora of Gastro-Intestinal Tract. L. Arnold, Chicago.—p. 246.
Bacterial Flora and Hydrogen Ion Concentration of Duodenum. L. Arnold and L. Brody, Chicago.—p. 249.
Hog Cholera Studies. R. A. Whiting, Lafayette, Ind.—p. 256.
Comparative Study of Strains of Clostridium Chauvoei Obtained in United States and Abroad. J. P. Scott, Manhattan, Kan.—p. 262.
Bacterial Flora of Market Oysters. J. C. Geiger, W. E. Ward and M. A. Jacobson, Chicago.—p. 273.

Chemistry of Intestinal Flora of Nurslings.—The nitrogenous metabolism of the mixed intestinal flora of twelve nurslings was investigated by Kendall, Day and Walker. The nitrogenous changes induced by the microbes were relatively little. Proteolysis of bacterial origin was minimal. The striking change induced by the mixed flora was a pronounced fermentation of utilizable carbohydrates, particularly glucose and lactose. In these mediums, there was a rapid and intense formation of acid, with almost no indication of nitrogenous changes in the constituents of the medium other than those ultimately associated with the anabolic phase of bacterial activity. This pronounced fermentation (principally lactic) is characteristic of the chemical findings of the combined fecal bacteria of nurslings.

Chemistry of Intestinal Flora of Artificially Fed Infants.—Kendall, Day and Walker found that the intestinal floras of artificially fed children induce putrefactive changes in sugar-

free mediums, and fermentative changes in the same mediums to which carbohydrates have been added.

Chemistry of Intestinal Flora of Normal Adults.—The general result obtained by Kendall, Day and Walker from the metabolic study of fairly representative intestinal floras from normal adults is a chemical picture of moderate proteolysis in mediums containing no utilizable carbohydrate, and a supression of this proteolysis nearly to the vanishing point when utilizable carbohydrates are added. One of the potentially useful facts gleaned from these observations is the striking effect of diet on the nitrogenous metabolism of these normal adult bacteria: utilizable carbohydrate, as long as it is continuously available, reduces or suppresses aromatic putrefactive products practically to the vanishing point. Another feature is the low proteolytic change in plain broth cultures, which contrasts strikingly with the marked proteolysis present in those persons whose intestinal flora contains a very easily appreciable overgrowth of gas bacilli, notably *B. aerogenes-capsulatus*.

Journal of Nervous and Mental Disease, New York

63: 209-312 (March) 1926

Problems Presented by General Paresis. E. Kraepelin, Munich, Bavaria.—p. 209.
*Vegetative Disturbances in Postencephalitic Syndromes: Relationship to Diencephalic and Mesencephalic Lesions. Changes in Basal Metabolism. S. Naccarati, New York.—p. 219.
*Psychogenesis of Confirmed Stammerers. L. P. Clark, New York.—p. 238.

Basal Metabolism in Postencephalitic Syndromes.—Forty-seven cases presenting postencephalitic syndromes of different duration and intensity are analyzed by Naccarati. From his findings he assumes that basal metabolism is altered in postencephalitic syndromes and, considering the seat of the destructive lesions which take place in encephalitis, the alteration of the metabolic rate can be connected with changes occurring in the vegetative centers located in the gray substance which surrounds the third ventricle and the aqueduct of Sylvius. Metabolic functions are located in very complicated organs, pathways and centers, which form a chain going from the internal organs, endocrine glands, through the sympathetic nervous system to the vegetative centers of the mesencephalon and basal ganglions. A lesion in any of the structures along this chain will lead to alteration of the metabolic activities.

Psychogenesis of Confirmed Stammerers.—The suggestion is advanced by Clark that all stammerers are oral erotics, but as this form of infantile fixation is really only a part of the character distortion from the three great sources of its formation, i. e., the oral, the anal and the urinary erotism, the oral character formation is always interwoven with other reaction formations, against the primacy of the instinctive impulses to nurse, to soil and to void. This fact accounts for the clinical variations in stammering as well as the varieties of make-up. The main accent must be placed on the varieties of oral erotic behaviors.

Maine Medical Association Journal, Portland

27: 23-42 (Feb.) 1926

Treatment of Syphilis. B. B. Foster, Portland.—p. 23.
Quantitative Wassermann Reaction as Guide in Treatment of Syphilis. M. Warren, Portland.—p. 24.
Significance of Proctology as Specialty. R. W. Jackson, Fall River, Mass.—p. 29.
Treatment of Acne Vulgaris with Roentgen Ray. W. E. Freeman, Portland.—p. 38.

Military Surgeon, Washington, D. C.

58: 113-224 (Feb.) 1926

Hospital Center at Mars-Sur-Allier, France. G. A. Skinner.—p. 113.
Treatment of War Wounds of Face and Jaws. J. Bercher.—p. 130.
Forerunners of American Army Nurse. J. C. Stimson, S. L. Millikin and E. C. S. Thompson.—p. 133.
Identification of Projectiles in Criminal Cases. C. H. Goddard.—p. 142.
Organization of Divisional Medical Service for Handling Gas Casualties. A. De Roulet.—p. 156.
Typhus Fever Along Rio Grande in 1924 and 1925. F. Gardner and A. K. Brown.—p. 165.
Standardization of Splints in A. E. F. N. Allison.—p. 170.

Minnesota Medicine, St. Paul

9: 105-150 (March) 1926

Intestinal Tuberculosis. F. L. Jennings and E. Fenger, Oak Terrace.—p. 105.
Indications for Artificial Pneumothorax. P. M. Matill and M. H. Wall, Oak Terrace.—p. 108.
Differential Diagnosis of Pulmonary Tuberculosis. H. S. Boquist, Oak Terrace.—p. 110.
Heliotherapy in Tuberculosis. J. H. Bendes, Oak Terrace.—p. 112.
*Pleurisy: Significance and Treatment. D. R. Hastings, Oak Terrace.—p. 114.
Glen Lake Sanatorium. E. S. Mariette, Oak Terrace.—p. 116.
*Flocculation Test in Tuberculosis. W. L. Hardesty, Oak Terrace.—p. 119.
*Treatment and Prevention of Tuberculosis. J. A. Myers, Minneapolis.—p. 121.
Tonsillectomy in Tuberculous. H. Newhart, Minneapolis.—p. 124.
*Thoracoplasty in Tuberculous. A. A. Law, Minneapolis.—p. 126.
Prognosis of Tuberculosis in Infancy and Childhood. F. W. Schlutz, Minneapolis.—p. 127.
Tuberculosis and Pregnancy. J. C. Litzenberg, Minneapolis.—p. 129.
Tuberculosis of Oral Cavity. C. W. Waldron, Minneapolis.—p. 131.

Significance of Pleurisy.—Of 1,182 patients with tuberculosis whose histories were reviewed by Hastings, a history of fibrinous pleurisy and pleurisy with effusion occurred in 55.7 per cent of cases. Hastings feels that this means that fibrinous pleurisy may be the first symptom of pulmonary tuberculosis; hence, patients with fibrinous pleurisy should be warned that they may have tuberculosis.

Flocculation Test in Tuberculosis.—Hardesty prefers the Baum technic. He has carried out the reaction in 300 cases, comprising patients and employees of a sanatorium, and guinea-pigs, healthy and diseased. Strongly positive reactions have occurred only in tuberculosis. The intensity of the reaction is roughly proportional to the extent and activity of the process. Weak positive reactions are occasionally found in those with mild tuberculous infection and in individuals presumably healthy. Negative reactions occurred only once in active tuberculosis. Thus, it would seem that one great value of the reaction consists in its power to differentiate between active tuberculosis in which the bacilli are not found, and other diseases which clinically simulate it.

Diet in Tuberculosis.—Myers urges that the diet of the tuberculous patient must be prescribed by the physician just as drugs are prescribed in certain other diseases. He objects to forced feeding and stresses the importance of meeting the vitamin requirement of the body.

Thoracoplasty in Tuberculous.—Law has done fifty-eight operations on thirty-one patients and has lost only one directly from the operation. This was a one stage operation, and the man died of shock. In all cases he has used local nerve block with procaine, supplemented by nitrous-oxide gas and oxygen analgesia.

Missouri State Medical Association Journal, St. Louis

23: 89-120 (March) 1926

Remedial Laws in Relation to Public Health. J. H. Caruthers, Jefferson City.—p. 89.
Periodic Health Examinations. J. M. Dodson, Chicago.—p. 93.
Periodic Health Examinations. F. I. Ridge, Kansas City.—p. 98.
*Common Warts of Mouth: Two Cases. W. D. Davis, St. Louis.—p. 99.
*Causes of Blindness in Youth. H. D. Lamb, St. Louis.—p. 101.
*Enteritis of 1925. J. Zahorsky, St. Louis.—p. 104.
Importance of Ear, Nose and Throat Diseases in Industrial Efficiency. I. D. Kelly, Jr., St. Louis.—p. 106.

Warts of Mouth.—Of the two cases reported by Davis, one was a single verruca of the tongue. The other patient had an enormous number of verrucae in the mouth.

Cause of Blindness in Youth.—Of 507 cases of blindness examined by Lamb, 216, or 21.2 per cent, were due to ophthalmia neonatorum, and 154, or 15.1 per cent, to optic atrophy. Only eighty-seven cases were caused by congenital cataract, and sixty-eight each by corneal ulceration and uveitis. Trauma caused sixty-six cases.

Diarrhea in Children.—Zahorsky records some peculiarities of the diarrheal diseases in children during the summer of 1925 in St. Louis. To this is added a summary of the therapeutic procedures employed and a discussion of the modern theories of gastro-enteric intoxication in the light of this clinical experience. Zahorsky thinks we must go back to

intestinal antiseptics, laxatives and specific serums. Babies should be immunized when young against colon bacilli by suitable vaccines.

New York State Journal of Medicine, New York

26: 175-224 (March) 1926

*Treatment of Certain Cardiac Emergencies. H. E. B. Pardee, New York.—p. 175.
*Fertility and Health. D. Macomber, Boston.—p. 179.
Is Diabetes Due to Diseases of Liver? L. W. Kohn, New York.—p. 182.
Psychoneurosis: Case. W. B. Terhune and A. F. Riggs, Stockbridge, Mass.—p. 185.
Brain Tumors. G. Horrax, Boston.—p. 186.
Value of Blood Chemistry Studies to Surgeon. A. M. Dickinson, Albany. —p. 190.

Treatment of Cardiac Emergencies.—Three points are stressed by Pardee: First, epinephrine must be used with caution in the presence of a weak pulse due to cardiac failure. Second, if digitalis is to be given for cardiac emergencies, it must be given intravenously and in much larger doses than is customary, or the full benefit that digitalis is able to give will not be obtained until the time of the emergency is past. Third, these doses should not be used intravenously unless it is certain that the patient has not been taking digitalis within the two weeks preceding.

Fertility and Health.—The degree of fertility, Macomber says, is indicative of the completeness and normality with which the reproductive organs are functioning. It is intimately bound up with conditions of general health and with certain phases of the physiology of the reproductive organs. Several abnormal conditions of the body as a whole—namely, anomalies of nutrition, anemia, postural defects, foci of infection and endocrine disturbances—are found frequently associated with lowered fertility. Furthermore, these cases of lowered fertility all show some evidence of alteration of function. The three forms of alteration most commonly found are hyposecretion, hypersecretion and ovarian dysfunction.

Northwest Medicine, Seattle

25: 111-166 (March) 1926

Control of Scarlet Fever. G. F. Dick and G. H. Dick, Chicago.—p. 111.
*Blood Pressure in Women as Influenced by Poor Pelvic Organs. W. C. Alvarez, San Francisco.—p. 120.
Adenomyomas and Ectopic Endometrial Growths. R. W. Te Linde, Baltimore.—p. 123.
*Cancer of Cervix Uteri: Variations in Malignancy of Different Varieties. K. H. Martzloff, Portland, Ore.—p. 127.
Recent Mechanical Injuries to Eyes. E. Jackson, Denver.—p. 138.
Lymphatic Cysts of Neck: Case. E. B. Waffle and F. E. Fowler, Astoria, Ore.—p. 142.
Von Recklinghausen's Disease or Neurofibromatosis: Case. M. L. Bridgeman, Portland, Ore.—p. 144.
Carcinoma of Stomach in Man of Twenty-Two. H. H. Kretsler, Edmonds, Wash.—p. 146.
Why a Child Welfare Division in State Board of Health? F. S. Bradley, Helena, Mont.—p. 147.
Maternity and Infancy Act. H. D. Bonness, Helena, Mont.—p. 151.
World War or Peace as Related to Work of Canton Hospital. J. O. Thomson, Canton, China.—p. 153.

Blood Pressure in Women.—The records from 1,230 women have been analyzed by Alvarez, and the average blood pressures have been calculated for women of different ages. The sexually abnormal averaged considerably higher than the sexually normal. Single women were found to average a little higher than the married. A masculine distribution of body hair, sexual anesthesia, fibroids of the uterus, thyroid disease, and pelvic conditions requiring ovariectomy or hysterectomy were found to be associated with high blood pressure. The evidence presented supports the theory that the essential type of hypertension is a bodily peculiarity inherited equally by girls and boys, but ordinarily repressed in the girls by the ovarian or other related secretions. In men, and in women with defective pelvic organs, the disease generally makes its appearance shortly after puberty.

Cancer of Cervix Uteri.—Of 203 patients that were operated on and in whom the ultimate result is known, thirty-eight (18.7 per cent) are living and well today. Of the cases in which the spinal cell is the predominant type of cancer cell, 38.8 per cent of the patients are living and well. In the transitional group, 15.1 per cent are living and well, while in the fat spindle cell group the percentage is 4.76. The adenocarcinomas, while showing the smallest percentage incidence of all the cervical cancers, give a 21.4 percentage of apparent cures. Martzloff feels that the findings are strongly indicative that the histologic character of the predominant type of cancer cell in cervical epidermoid carcinoma is a good index as to the relative malignancy of the neoplastic process.

Ohio State Medical Journal, Columbus

22: 201-280 (March) 1926

Medical Aspects of Angina Pectoris. W. D. Reid, Boston.—p. 205.
Cysts of Breast. F. E. Bunts, Cleveland.—p. 209.
*Tic Douloureux of Glossopharyngeal Nerve. L. A. Miller, Toledo.—p. 214.
Hemorrhage of New Born: Brain Hemorrhage. H. O. Ruh and J. A. Garvin, Cleveland.—p. 215.
Treatment of Chronic Laryngotracheal Stenosis. S. Iglauer, Cincinnati. —p. 218.
Public Health Laboratory Program. H. J. Knapp, Cleveland.—p. 221.
Principles Underlying Dietetic Control of Diabetes Mellitus. C. Striker, Cincinnati.—p. 224.
Economic Status of Doctor. L. L. Bigelow, Columbus.—p. 228.

Tic Douloureux of Glossopharyngeal Nerve.—Miller's patient, a woman, aged 42, complained of paroxysmal seizures of sharp, agonizing pain occurring deep in the right side of the neck just behind the ramus of the jaw, probably in or near the tonsil. The pain radiated more or less downward in the neck and sometimes to the right ear (the affected ear). The seizures lasted from a few seconds to a minute or two. They recurred every few minutes, so that it was very difficult for the patient to converse, since talking provoked paroxysms. The spasms of pain were excited by eating, drinking, talking or even by washing the face. Following a radical operation on the mastoid and middle ear, the patient was immediately freed from the neuralgia, and has remained practically so to the present, except for a very few fugacious pains of little consequence other than to suggest an ill omen.

Radiology, St. Paul

6: 91-180 (Feb.) 1926

American College of Radiology. A. Soiland, Los Angeles.—p. 122.
Teaching of Roentgenology in University of Michigan. P. M. Hickey, Ann Arbor, Mich.—p. 125.
Financing Clinicopathologic and Roentgen-Ray Laboratory in Hospital and Conserving Professional and Economic Interests of Medical Personnel. B. C. Darling, New York.—p. 127.
Radiogrameter: Scale for Mensuration by Means of Roentgen Ray. C. R. Johnson, Los Angeles.—p. 131.
Roentgen-Ray Diagnosis of Syphilis of Stomach. L. T. Le Wald, New York.—p. 138.
Therapeutic Uses of Radioactive Substances: Cancer of Uterine Cervix. J. Muir, New York.—p. 146.
Calibration as Aid in Standardization of Technical Procedure. E. C. Jerman, Chicago.—p. 151.
Treatment of Pyogenic Infection by Roentgen-Ray Irradiation. J. D. Lawson, Woodland, Calif.—p. 153.
Cholecystography: Oral Administration of Sodium Tetraiodophenolphthalein. J. W. Larimore, St. Louis.—p. 156.

Rhode Island Medical Journal, Providence

9: 33-48 (March) 1926

Roentgen-Ray Treatment of Superficial Pyogenic Infections. I. Gerber, Providence.—p. 33.
Acute Sinusitis. F. B. Sargent, Providence.—p. 38.
Inversion of Uterus. I. H. Noyes, Providence.—p. 39.

Southern Medical Journal, Birmingham, Ala.

19: 157-240 (March) 1926

*Remote Results of Certain Focal Infections Occurring During Infancy and Childhood. McK. Marriott, St. Louis.—p. 157.
*Pulmonary Streptothricosis. G. Giddings, Atlanta, Ga.—p. 160.
*Unwarranted Surgery in Achylia Gastrica. B. W. Fontaine, Memphis. —p. 165.
*Dietary Factor in Treatment and Prevention of Pellagra: Yeast. C. Faust-Newton, Dallas, Texas.—p. 168.
Diagnosis of Disease of Gallbladder. T. Z. Cason, Jacksonville, Fla.—p. 176.
*Rat Bite Fever (Sodoku). J. A. Lanford, New Orleans.—p. 179.
Rat Bite Fever: Case. J. LaBruce, Asheville, N. C.—p. 182.
Asthma Problem as It Affects South. I. S. Kahn, San Antonio.—p. 183.
*Erythema Multiforme Complicating Vaccination. F. J. Eichenlaub, Washington, D. C.—p. 186.
County Hospitals. J. H. Way, Waynesville, N. C.—p. 189.
Marriage Laws: Their Need, and Cause and Cure of Their Weaknesses. R. M. Carruth, New Roads, La.—p. 193.
Complete Cholecystostomy vs. Cholecystectomy in Cases of Empyema of Gallbladder. E. D. Martin, New Orleans.—p. 198.
Gonococcal Endocervicitis. H. W. E. Walther and C. L. Peacock, New Orleans.—p. 202.
Stages in Formation of Bladder Diverticula. D. K. Rose, St. Louis.—p. 206.

Retraction Ring and Difficult Deliveries. W. T. Pride, Memphis, Tenn.—p. 212.
Induction of Labor: Case Reports. R. A. Johnston, Houston, Texas.—p. 215.
Prenatal Cure. J. W. Newman, New Orleans.—p. 218.
Syphilis in Railroad Employees. J. R. Garner, Atlanta, Ga.—p. 222.
Certain Diseases and Injuries of Spine in Adults. E. W. Ryerson, Chicago.—p. 224.
Asthma. T. W. Moore, Huntington, W. Va.—p. 226.
Idiopathic Detachment of Retina: Two Cases. H. L. Sloan, Charlotte, N. C.—p. 228.

Remote Results of Focal Infections.—Marriott emphasizes the fact that general and remote symptoms of infection in the ear, nose and throat of children are more important than the local signs, and the examination of the child is not complete unless these infections are sought for.

Pulmonary Streptothricosis.—A case of streptothrix infection of the lung that has been studied by clinical, roentgenologic and bacteriologic methods is presented by Giddings. The organism grew readily on all mediums. It was pathogenic for guinea-pigs, but not for rabbits.

Unwarranted Surgery in Gastric Achylia.—Reviewing the histories of 175 cases of true achylia, Fontaine has been impressed by the fact that in fully 25 per cent abdominal pain has been the symptom for which the patients sought relief. These cases were not associated with pernicious anemia, syphilis, or cancer of the stomach. In many of the instances, the pain, though less severe, has resembled that of gallbladder disease, appendicitis, or peptic ulcer. Fontaine warns against unwarranted surgery in these cases. They are amenable to treatment by the use of liberal doses of hydrochloric acid, with the proper dietetic regimen.

Diet in Prevention and Treatment of Pellagra.—Faust-Newton says that in the treatment of pellagra the ample ingestion of food containing vitamin B and possibly the unknown pellagra vitamin is essential (fresh meat, orange and lemon juice, tomato juice, yeast). The administration of dried brewers' yeast, in sufficient quantities, is so effective that this may almost be termed a specific for pellagra.

Sodoku; Rat Bite Fever.—Lanford advocates the use of the term sodoku for the designation of cases of real rat-bite fever in order to clarify a greatly muddled situation.

Erythema Multiforme Complicating Vaccination.—Fourteen cases of erythema multiforme complicating vaccination are recorded by Eichenlaub, seven of which were seen personally by the author. Definite conclusions as to the causative agent could not be made. The possible analogy between these eruptions and hemorrhagic smallpox is pointed out. The probable incidence of this type of eruption is estimated at approximately one in 10,000 vaccinations.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

2: 223-341 (March) 1926

*Neurologic Studies in Psychotic Cases. D. G. Dickerson, American Lake, Wash.—p. 223.
Interpretation of Inadequate Behavior Through Neuropsychiatric Symptoms. C. L. Carlisle, Waukesha, Wis.—p. 230.
Commitment of Insane Beneficiaries to U. S. Veterans' Bureau Hospitals. G. F. Brewster, Bronx, N. Y.—p. 249.
Artificial Pneumothorax. L. G. Beardsley, Washington, D. C.—p. 253.
Value of Early and Liberal Use of Artificial Pneumothorax. A. Shamaskin, Rutland, Mass.—p. 258.
Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. J. H. Allen, Whipple, Ariz.—p. 266.
Roentgenologic Diagnosis of Gastric and Duodenal Ulcer. C. E. Fitzsimmons, Kansas City, Mo.—p. 270.
*Early Diagnosis of Gastric and Duodenal Ulcer. F. C. Cassidy, Dwight, Ill.—p. 276.
Internal Hospital Administration. G. L. Johnson, Algiers, La.—p. 281.
Method of Relining Full Upper Dentures. S. Koontz, Minneapolis.—p. 297.
*Cardiovascular Diseases in U. S. Veterans' Bureau. P. B. Matz, Washington, D. C.—p. 304.
Recent Advances in Study of Cancer. L. H. Prince, Washington, D. C.—p. 310.
Psychoses. O. Everman, Washington, D. C.—p. 318.

Headache and Mental Disease.—A complaint of headache in a patient presenting mental disease, Dickerson says, should always be investigated by both fundoscopic and radiographic examinations; a search for organic disease in these patients should be undertaken in all of its details.

Frequency of Symptoms of Peptic Ulcer.—Twenty-one cases of duodenal ulcer and nine of gastric ulcer were analyzed by Cassidy with reference to frequency of symptoms. Epigastric pain was present in every case; hematemesis in eight; gas in nineteen; constipation in sixteen; headache in sixteen, and dizzy spells in twelve cases.

Cardiovascular Diseases in Veterans' Bureau Hospitals.—A study was made of the incidence of heart disease in the Veterans' Bureau hospitals, and it was found that of a total patient load of 26,689 there were 537 who had some form of cardiac disability, an incidence of 2.01 per cent. Of the 537 cardiac cases, 273 were hospitalized primarily for the heart condition, 176 were hospitalized for some major disability to which the heart condition was secondary, and eighty-eight patients had a heart disability which was considered of minor importance. The incidence of heart disease in the colored race is much higher than it is in the white race. A study of the cardiac diseases found in the tuberculosis hospitals show that 191 of a patient load of 9,299 had some cardiac disability, thus making an incidence of 2 per cent. Forty-five of these patients had mitral insufficiency; twelve had mitral stenosis, and fifty had either acute or chronic myocarditis. It is interesting to note that 35 per cent of the heart disabilities are found in patients suffering from pulmonary tuberculosis. This shows that tuberculosis coexists quite frequently with heart disease. The incidence of heart disease in neuropsychiatric patients is very low. Of 12,297 beneficiaries under treatment in neuropsychiatric hospitals, eighty-two had some cardiac disability, an incidence of 0.6 per cent. It is also found that in general hospitals, out of 5,093 patients, 264 were under treatment for heart disease, an incidence of 5 per cent. Of these patients, fifty-eight had mitral insufficiency, forty-nine had acute or chronic myocarditis, twenty had combined mitral and aortic lesions, nineteen were cases of mitral stenosis, and sixty-five patients had heart lesions which were not classified. The most common cardiac diseases observed in Veterans' Bureau beneficiaries are mitral insufficiency, acute and chronic myocarditis, cardiac hypertrophy and mitral stenosis. The high incidence of acute and chronic myocarditis is due to the large number of cases of tuberculosis under treatment, which condition may be an etiologic factor in inflammatory processes of heart muscle.

Virginia Medical Monthly, Richmond

53: 755-812 (March) 1926

*Stricture of Ureter. C. J. Andrews, Norfolk.—p. 755.
*Ureteral Stricture. W. B. Martin, Norfolk.—p. 758.
Spinal Puncture as Aid in Neurosurgical Diagnosis. J. G. Lyerly, Richmond.—p. 763.
Xerophthalmia in Infants. St. G. T. Grinnan, Richmond.—p. 768.
*Ova in Gall Tract Drainage. R. S. Preston, Richmond.—p. 769.
Indications for Calcium Therapy. O. O. Ashworth, Richmond.—p. 772.
Vomiting of Pregnancy. R. P. Kelly, Lynchburg.—p. 775.
Diagnosis and Treatment of Goiter. W. H. Higgins, Richmond.—p. 780.
Surgical Treatment of Nonparalytic Strabismus. J. H. Dunnington, New York.—p. 784.
Pathology of Heart-Pain. J. A. Wilkins, Norfolk.—p. 787.
Pleurisy. M. J. Payne, Staunton.—p. 789.

Stricture of Ureter.—Fifty-five cases are analyzed by Andrews. Forty operations were done on twenty-seven of these patients, and while it is not believed that all these operations were useless, the fact remains that the pain for which the operations were done was not relieved.

Ureteral Stricture.—Martin endeavors to construct a clinical picture of ureteral stricture that may be of assistance to the general practitioner in recognizing this condition. The material consists of twenty cases. Cystoscopic examination showed a well defined stricture of the right ureter. Certain symptoms stand out prominently, especially pain in the back radiating to the bladder, associated with history of bladder irritation at some time, together with localized tenderness. The association of these symptoms alone is sufficient to arouse suspicion of ureteral stricture. While the condition is not extremely frequent, it occurs often enough to make it important that every one should be familiar with the symptomatology. Martin says that in consideration of lower right quadrant pain it is of especial significance, and before a laparotomy is undertaken for the relief of undetermined trouble, stricture of the ureter should be excluded.

Ova in Gall Tract Drainage.—Preston reports the case of a woman whose principal complaints had been nausea, giddiness, constipation, cramps and paresthesias in the lower extremities and attacks of pain in the hepatic and right renal regions. The woman had been subjected to a number of operations without getting any relief. On making duodenal drainage, Preston discovered ova in the bile. He concludes that there was a female *Ascaris* in the biliary tract, most likely inside of the liver. This parasite had existed there five or more years, judging from a long continued eosinophilia. It had been depositing ova for more than a year.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

31: 81-118 (March) 1926

Treatment of Carcinoma of Tongue. D. Quick, New York.—p. 81.
Gastro-Intestinal Infection: Its Roentgen-Ray Manifestations. C. Eastmond, Brooklyn, N. Y.—p. 93.
Light Sources Used in Actinotherapy. T. T. Baker, London.—p. 105.

British Medical Journal, London

1: 515-554 (March 20) 1926

*Diet and Disease. E. Mellanby.—p. 515.
*Value of Irradiated Cholesterol in Treatment of Rickets. L. G. Parsons.—p. 519.
*Etiology of Gastric and Duodenal Ulceration. K. W. Monsarrat.—p. 521.
Treatment of Dangle-Foot by Campbell's Method. R. Ollerenshaw.—p. 525.
Treatment of Amebic Dysentery by Auremetine. J. G. Willmore and W. H. Martindale.—p. 525.
*Perforated Jejunal Ulcer. A. T. Ashcroft.—p. 528.
Acute Suffocative Pulmonary Edema. M. Cohen.—p. 528.
*Treatment of Septic Tuberculous Arthritis. J. O'Conor.—p. 528.
Appendix in Left Inguinal Hernia. G. F. Smith.—p. 528.

Diet and Disease.—Mellanby presents what he regards as evidence that defects of diet of women during pregnancy and lactation are responsible for some, and possibly much, of the illness and mortality of young infants. The new teachings of diet have been applied to some extent to the feeding of children, and this is no doubt partly responsible for the decrease in infant mortality during recent years, at a time when overcrowding and some other hygienic defects are as bad as, or even worse than, ever; but it is necessary to extend the teaching to the problem of maternal feeding. This would probably show its first effect by reducing the infant mortality of children under 1 month of age and would result in great improvement in the physique of children. It would increase the resistance of infants to infections which produce catarrhal conditions of the respiratory and alimentary tracts and all the other sequelae so generally recognized as likely to follow. It would certainly result in a better grown and less rickety type of child, and would do something also to improve the structure of the teeth and thereby to reduce the appalling amount of caries in the teeth of children. It would probably also bring about improvement in the general health of the pregnant woman, and do away with some of the unfortunate experiences to which she is liable.

Irradiated Cholesterol in Rickets.—A case of severe rickets is described by Parsons which had been under treatment during the greater part of 1925. From April to the beginning of September, the child received cod liver oil as an outpatient, but with only slight improvement; during the last three months of the year he was admitted into the hospital, and irradiated cholesterol was administered, with the result that the rickets was cured.

Etiology of Gastric and Duodenal Ulcer.—In Monsarrat's opinion there is no satisfactory evidence that chronic gastric and duodenal ulceration is primarily due to direct invasion of the stomach or duodenal wall by specific organisms. Chronic gastric and duodenal ulceration is not caused by alterations in the chemistry of the gastric secretions. The evidence available points to alteration in gastric rhythm being the primary morbid condition, which, when persistent, leads to the development of ulceration. The site of the ulceration is the site of maximum wear and tear by gastric contents, whose normal neutralization has been interfered with by the altered gastric rhythm. The gastric secretions, innocuous to the stomach wall under normal conditions, cause irritation and eventual ulceration, when the gastric rhythm is altered; trophic changes may also prepare the way for this action. The fundamental condition on which these morbid changes in the gastric motility and rhythm depend is doubtless a disorder of gastric innervation, which may have its origin in toxic influences, or pyschic influences, or in reflex influences from disease elsewhere. The innervation of the stomach is not, however, so completely analyzed as to make it possible to say whether these influences bear on an autonomic gastric system or whether they affect the stomach by way of the vagus or sympathetic. There is, however, some evidence that in the gastric type, which is usually associated with duodenal ulceration, there is some inhibition of impulses by the splanchnic path, and that in the gastric type, which is usually associated with gastric ulceration, it is the vagus impulse that is depressed.

Perforated Jejunal Ulcer.—In a case of perforated duodenal ulcer reported by Ashcroft, a posterior gastro-enterostomy was performed, and the man made an uninterrupted recovery. A year later the patient was readmitted. He stated that there had been total absence of pain in the abdomen for seven months after operation. At the end of this period he began to experience periodic attacks of generalized abdominal pain, occurring every three days and lasting from ten to fifteen minutes; the pain had no relation to food. Gradually the characteristics of the pain altered; it became localized to a point 1 inch below the umbilicus and began to show a definite relationship to food, coming on about four hours after a meal and lasting until another meal was taken. The pain was relieved by self-inducing vomiting. At the operation a perforated jejunal ulcer was found on the posterior wall of the efferent loop of the gastro-enterostomy coil of jejunum about 1½ inches from the patent gastro-enterostomy stoma. The ulcer was enclosed by a purse-string suture. As the pylorus was found patent, admitting a thumb easily, an entero-enterostomy between the afferent and efferent loops of the gastro-enterostomy loop of jejunum was performed. Three months later the patient was again admitted with symptoms similar to those which followed his first operation. A laparotomy was performed, and a second jejunal ulcer was discovered in close proximity to the gastro-enterostomy stoma. A partial gastrectomy, which involved three fourths of the stomach and the whole of the loop of the jejunum taking part in the gastro-enterostomy, was performed. The man made an absolute recovery. In a second case, a posterior gastro-enterostomy was performed for a juxtapyloric ulcer. The patient was again admitted three months later with signs suggestive of a perforated duodenal ulcer. The abdomen was opened, and a perforated jejunal ulcer was found on the efferent loop of the gastro-enterostomy coil of jejunum.

Treatment of Septic Tuberculous Arthritis.—O'Conor opens all sinuses freely so as to expose the interior (and recesses) of the joint. Every visible particle of diseased bone and tissue is removed, and copious irrigation with warm hydrogen peroxide (1:17) and phenol (1:70) is done. Then large wisps of silkworm gut are introduced, and the rest of the cavity is packed with rolls of gauze wrung out of freshly prepared iodoform emulsion. The flushing and packing is repeated after forty-eight hours. The patient is kept outdoors, the part being maintained in absolute rest.

China Medical Journal, Shanghai

40: 95-184 (Feb.) 1926

Anthropometry in China. P. H. Stevenson.—p. 95.
Converting Chinese Ages to Their Foreign Equivalents. P. H. Stevenson and P. Ming-Tzu.—p. 128.
Value of Milk Injections in Treatment of Gonorrheal Ophthalmia. D. V. Smith.—p. 131.
Cytology of Aural Discharge. S. Ts'en.—p. 136.
Chocolate Cysts of Ovary with Implantation Pelvic and Intestinal Endometriosis. J. R. B. Branch.—p. 138.
Check List of Mosquitoes of Sino-Japanese Areas. E. C. Faust.—p. 142.
Hotels as Measure of Economy in Hospital and Administration. F. F. Tucker.—p. 144.
Medicinal Adjuvants. C. Y. Ch'eng.—p. 146.
Rat-Bite Fever. E. S. Curtis.—p. 158.

Edinburgh Medical Journal

33: 97-188 (March) 1926

*Virulence of Tuberculous Viruses. W. T. Munro and W. M. Cumming.—p. 97.
Treatment of Renal Tuberculosis from Standpoint of Surgeon. H. Wade.—p. 108.
Production of Certified Milk. R. Philip and J. C. Simpson.—p. 118.
Early Tuberculosis in Cows. R. Philip and J. C. Simpson.—p. 120.
Use of Light in Treatment of Tuberculosis of Skin. N. Walker.—p. 122.
Serology of Tubercle Bacillus. W. M. Cumming.—p. 135.
*Reaction Curve of One Hundred and Seventeen Strains of Tubercle Bacilli. W. M. Cumming.—p. 141.
*Pulmonary Tuberculosis and Allied Conditions in Infancy and Childhood. L. Findlay.—p. 147.
*Some Statistical Aspects of Tuberculous Meningitis. J. L. Halliday.—p. 160.

Virulence of Tuberculous Viruses.—Of sixty-three viruses isolated by Munro and Cumming from "surgical" lesions, twenty were found to be of the bovine type, two of these being, however, somewhat less virulent than typical dysgonic viruses, one of which was atypical in both culture and virulence. Bovine bacilli are very rarely obtained from pulmonary lesions, but they are frequently obtained from glandular lesions. By selection according to age groups and lesions, one can show a distinct age and tissue incidence of bovine infection.

Reaction Curves of Tubercle Bacillus Strains.—Cumming says that the amount of information derived from a study of the reaction curve in the differentiation of human from bovine strains of tubercle bacilli is not commensurate with the amount of time and labor involved.

Diagnosis of Pulmonary Tuberculosis in Children.—If there is no generalization of the disease throughout the lung, and the enlarged spleen, enlarged glands, and the presence of papuloneurotic tuberculids do not come to aid, Findlay says, the physician may not even surmise that he is dealing with tuberculosis, whereas the radiologist may, with the utmost confidence, diagnose the true nature of the disease.

Statistics on Tuberculous Meningitis.—Halliday's statistics show that the yearly death rate from tuberculous meningitis bears a more or less constant ratio to the yearly death rate from all forms of tuberculosis; in other words, tuberculous meningitis has declined at the same rate as tuberculosis in general. Tuberculous meningitis had a maximum seasonal prevalence in spring and early summer. This appears to be a belated manifestation of the conditions unfavorable to the respiratory system which obtain during the winter months. The spread of tuberculous infection, like that of diphtheria and scarlet fever, does not appear to be influenced by overcrowding and bad housing conditions, as tuberculous meningitis is no more common in the child population of the smaller houses than it is among children in the larger houses.

Indian Medical Gazette, Calcutta

2: 53-102 (Feb.) 1926

Influence of Food on Moral and Physical Development in British India. V. B. Green-Armytage.—p. 53.
Baby Cinema in Public Health Propaganda. A. W. Tuke.—p. 55.
*Isolating and Cultivating Vibrios from Feces for Detection of Vibrio Carriers in Field Work. J. W. Tomb and G. C. Maitra.—p. 56.
Incidence of Neurosyphilis Among Colored Races. O. A. R. B. Hill.—p. 57.
*Katakar Oil Poisoning. S. L. Sarkar.—p. 62.
*Treatment of Bubonic Plague with Intravenous Injections of Iodine. A. C. Bharadwaj.—p. 63.
Effect of Posterior Gastrojejunostomy on Chronic Duodenal Ulcer. W. C. Paton.—p. 64.
Extensive Fracture of Skull with Injury to Brain: Escape of Brain Matter; Recovery. A. S. Dawson.—p. 65.
Treatment of Amebic Abscess of Liver. H. Chand.—p. 66.
Case of Acute Hemorrhagic Pancreatitis. K. M. Nayak.—p. 67.
Operations on Old Men. B. Singh.—p. 68.
Case of Precocious Sexual Development. M. G. R. Row.—p. 70.
Huge Sebaceous Cyst of Scalp. P. P. Pillai.—p. 70.
Case of Dermoid Cyst of Ovary. K. Singh.—p. 71.
Case of Extra-Uterine Gestation. H. Chand.—p. 72.
Case of Myomectomy. N. P. Shrivastava.—p. 72.
Case of Septic Abortion Complicated by Coli Infection. D. N. Buchia.—p. 73.
Case of Madura Foot Treated by Chemotherapy: Apparent Cure. F. J. Palmer.—p. 74.
Case of Incipient Heart-Block. B. P. Bannerji.—p. 74.
Fatal Result Associated with Filarial Infection. B. N. Gupta.—p. 75.
Case Resembling Infantile Cirrhosis of Liver in Which Recovery Took Place. N. Gopalan.—p. 76.
Case of Pleural Effusion with Abdominal Symptoms. M. G. R. Row.—p. 77.
Iodine Intravenously in Pulmonary Disease. V. J. Lopes.—p. 77.
Cases of Foreign Bodies in Nose and Ear. J. N. Pradhan.—p. 78.

Isolating and Cultivating Vibrios from Feces.—Using bowls and tank mud, Tomb and Maitra imitated Nature and manufactured artificial ground tanks for the purpose of using them as a culture medium for vibrios. To 250 cc. of sterilized tank water, 1 per cent common salt and 0.1 cc. of a 1 per cent sterile peptone solution are added before inoculating the medium with feces. This method of isolating vibrios from feces and cholera stools has proved a great advance over all other existing methods, not only on account of its greatly increased accuracy but also on account of its cheapness.

Katakar Oil Poisoning.—Katakar oil is obtained from the mustard-like seeds of an Ayurvedic medical herb known as Sialkata. The scientific name of the plant is *Argemone mexicana* Linn., an American weed commonly known as the Mexican prickly poppy. The use of mustard oil adulterated with katakar oil causes symptoms like those of epidemic dropsy.

Iodine Intravenously in Bubonic Plague.—Bharadwaj reports good results from the use of iodine intravenously in the treatment of plague. He uses a solution of 18 grains (1.16 Gm.) of iodine in 4 ounces (120 cc.) of physiologic sodium chloride solution and injects from 5 to 10 cc. in one dose every day for four consecutive days. Early cases are very easily controlled, and from three to five injections are sufficient to effect a cure. The iodine treatment gives better results if it is supplemented with injections of pure phenol into the bubo, or of $\frac{1}{16}$ grain (4 mg.) of mercuric chloride in 2 cc. of distilled water into the lymphatic area drained by the group of glands in which the bubo has formed. No mercurial poisoning resulted from as many as three such injections given consecutively. No nourishment except water should be given for three days, and a mixture containing potassium iodide and stimulants should be given every four hours.

Journal of Laryngology and Otology, Edinburgh

41: 73-136 (Feb.) 1926

Furuncle of Right Nasal Vestibule: Septic Thrombosis of Cavernous Blood Sinuses: Leptomeningitis: Death: Recovery. A. Taylor and F. E. Reynolds.—p. 73.
Treatment of Congested and Enlarged Inferior Turbinates. F. H. B. Norrie.—p. 87.
Connection of Brain Abscess with Bronchiectasis. J. Adam.—p. 93.
Results of Ionic Medication in Chronic Middle Ear Suppuration. N. Lister.—p. 94.
*Unusual Cause of Death After Removal of Adenoids and Tonsils. H. B. Tawse.—p. 97.
Hemorrhage from Nasopharynx Following Adenoid Curettage. F. C. Ormerod.—p. 97.
*Unusual Path of Extrusion of Retained Tooth Fang. F. C. Ormerod.—p. 99.

Hemorrhage in Pons After Tonsillectomy.—Tawse records the case of a child who died suddenly twenty-three hours after removal of tonsils and adenoids. There was no cause of death apparent. The necropsy disclosed a hemorrhage, the size of a large peanut, in the center of the pons.

Retained Tooth Root Is Sneezed Out.—Ormerod reports the case of a woman, aged 21, who had a right upper premolar tooth extracted, one root being broken and retained. Six months later the patient was wakened in the morning by a tickling feeling at the back of the nose. A violent attack of sneezing resulted in the expulsion from the left nostril of the root of the bicuspid. Transillumination and puncture showed the right antrum to be full of a thin purulent fluid. The roentgenogram showed a large cavity in the region of the upper bicuspids with a very irregular and thin layer of bone separating it from the antrum. Ormerod concludes that the dental root must have become loose in an abscess formed around it; the tooth then passed into the antrum through an erosion in its floor and escaped through the normal ostium into the nose, from which it passed back into the nasopharynx and was then sneezed out.

Journal of State Medicine, London

34: 63-124 (Feb.) 1926

*Carrier Problem in Relation to Enteric Fever and Diphtheria. J. C. G. Ledingham.—p. 63.
*Prevention and Arrest of Rheumatic Disease. M. B. Ray.—p. 88.
Rheumatic Infection in Childhood. W. T. G. Pugh.—p. 111.
Vitamin B and Metabolism. R. H. A. Plimmer and J. L. Rosedale.—p. 117.

34: 125-186 (March) 1926

Variola, Vaccinia and Avian Molluscum. J. C. G. Ledingham.—p. 125.
Methods of Investigating Ventilation. H. M. Vernon.—p. 144.
Incidence and Prevention of Venereal Disease in Royal Navy. T. B. Shaw.—p. 154.
Prevention of Tuberculosis. S. L. Cummins.—p. 169.

Disease Carrier Problem.—Ledingham says persuasion and instruction will do more to reduce infection from declared carriers than any compulsory order rigidly applied. At the same time the community for its own security must have full power to retain on a permanent register all declared carriers, to insist on notification of all changes of address, to examine at any time their discharges and if necessary to remove to hospital for this purpose.

Prevention of Rheumatic Disease.—Ray asserts that nearly one sixth of the total invalidity of Great Britain is directly due to diseases classed as "rheumatic." Each year these diseases alone cost the Approved Societies nearly 2,000,000 pounds in sickness allowances and nearly 3,000,000 weeks are being lost to the nation in consequence. The importance of a publicity campaign with the object of educating the public in the need for a concerted effort to protect children from the devastating effects of this disease is strongly urged by Ray. Special hospitals for the treatment of children who have had an attack of rheumatic fever should be established all over the country. These institutions would differ from the ordinary hospital in that the patients would be kept for prolonged periods. The most satisfactory treatment is said to be "hydrological," implying the use of waters, baths and physical methods generally.

Lancet, London

1: 641-694 (March 27) 1926

Diseases of Nervous System. E. F. Buzzard.—p. 641.
Experimental Epidemiology. W. W. C. Topley.—p. 645.
*Diabetes Mellitus: Recoverable Disease? G. H. Percival.—p. 651.
*Changes in Ventricular Rate Associated with Stokes-Adams Attacks in Complete Heart-Block. C. E. K. Herapath.—p. 563.
*Double Inguinal Hernia in Infancy: New Incision. J. T. Morrison.—p. 656.
Unusual Case of Pneumothorax. B. Morgan.—p. 656.

Dietetic Treatment of Diabetes Mellitus.—The diet scale used by Percival is that described by Murray Lyon, consisting of three types graded according to the carbohydrate-fatty-acid ratio. The various diets are selected and interchanged to suit the requirements of individual cases during varying degrees of tolerance. Insulin is withheld, except in cases possessing such a low carbohydrate tolerance that it is impossible to abolish glycosuria, or to continue an adequate caloric intake by dietary measures alone. When required, insulin is injected two hours before a meal, except in very severe cases, when the interval is reduced at first to one or one and a half hours. The beneficial effect of this line of treatment is forcibly illustrated by those cases in which large doses of insulin have been diminished and ultimately stopped, while the patient has continued to take a generous diet, the constitution of which presents no extreme variation from the normal. In some of the cases treated by diet alone, a sugar tolerance approaching almost normal has been reached, and the injury to the pancreas has been apparently either recovered from or compensated for. On the other hand, in those who required insulin, the tolerance regained is not nearly so great. The cases reported by Percival are said to emphasize, first, the controllable character of the disease in the majority of cases treated on physiologic lines with the whole-hearted cooperation of the patient, and secondly, the fact that a surprising adequate carbohydrate tolerance may be recovered.

Ventricular Rate in Stokes-Adams Disease.—A continuous electrocardiogram of the whole of a Stokes-Adams attack is reproduced by Herapath. It suggests an explanation of the attacks of ventricular asystole. The attacks of asystole in a case of complete heart block were abolished by injection of epinephrine.

Incision for Double Herniotomy.—Morrison makes a 1½ inch (4 cm.) transverse incision along the line of the crest of the pubis which gives free access to either external abdominal ring. The incision is deepened till the surface of the aponeurosis is reached. With quite moderate traction the region of the abdominal ring is exposed. An oblique incision through the soft parts parallel to Poupart's ligament brings the cord and its coverings into view. The operation can then be completed in the ordinary way.

Quarterly Journal of Experimental Physiology, London

16: 1-86 (March 18) 1926

Experimental Mitral Incompetence. R. J. S. M'Dowall.—p. 1.
Movements and Reaction to Drugs of Strips of Gastric Musculature of Cat and Dog. G. L. Brown and B. A. M'Swiney.—p. 9.
Contractions of Isolated Cecum of Rabbit. J. A. Gunn and M. H. MacKeith.—p. 41.
Nervous Symptoms of Insulin Hypoglycemia in Rabbits Contrasted with Convulsions Induced by Cocaine. W. R. Brain.—p. 43.
Increase of Methyl-Guanidine in Blood After Parathyroidectomy. D. N. Paton and J. S. Sharpe.—p. 57.
Effect of Exercise on Growth of White Rats. C. Price-Jones.—p. 60.
*Size of Human Erythrocytes Before and After Exercise. H. Dryerre, W. G. Millar and E. Ponder.—p. 69.

Effect of Exercise on Size of Erythrocytes.—A method for investigating the mean size of human erythrocytes before and after exercise is described by Dryerre et al. In this method the cells are measured without having been exposed to any atmosphere other than one such as would be in equilibrium with the gaseous content of the blood vessel from which they were withdrawn. By this method, no difference has been found between the mean diameter of the cells before and after violent exercise.

Bulletin de l'Académie de Médecine, Paris

95: 211-257 (March 9) 1926

*Syphilis Among Workers in France. E. Jeanselme and Burnier.—p. 214.
Standardization of Biologic Laboratories. P. Remlinger.—p. 236.
Study of Microsporosis in Horses. Brocq-Rousseu.—p. 242.
Mechanical Milking of Cows. H. de Rothschild.—p. 244.
*Anatoxin Vaccination Against Diphtheria. C. Zoeller.—p. 247.
Refrigerator and Frozen Fish. A. Loir and Legangneux.—p. 252.

Syphilis in the Working Classes.—Jeanselme and Burnier compare the statistics of new syphilitic infections in France and in other countries the last six years. While the number of recent cases of syphilis has been decreasing in Belgium, Switzerland, Denmark and Austria, it has been increasing among workers in France. This fact seems to be due in part to the afflux of foreigners and natives of French colonies. It is not the imported virus which is accused, since 82 per hundred of the newcomers contracted their syphilis in France. At the St. Louis Hospital, Paris, the new infections formed 50 per cent of the total in 1919; then dropped to 31 per cent in 1923, and climbed to 60 per cent in 1925. Another factor in the increase is the tendency of French physicians to replace arsphenamine by bismuth, which is considered by Jeanselme and Burnier as less effective in treatment of syphilis.

Anatoxin in Mass Vaccination During Diphtheria Epidemic.—Zoeller applied anatoxin vaccination on a large scale in newly enrolled soldiers during an epidemic of diphtheria. A dose of 0.5 cc. of anatoxin was used for the first injection, 1 cc. for the next; the intervals, three weeks and eight days. In 305 with a positive Schick test, diphtheria appeared in 3.6 per cent after one injection; in 2.84 per cent after two, while among the nonvaccinated (including all the older soldiers) the percentage was 3.67. In another group of eighty-eight with a positive Schick test, twenty-eight were injected once or twice, and sixty, three times. Diphtheria occurred in 50 per cent after one or two injections; in 10 per cent after three. Among the controls the percentage was 50 per cent. The membranous throat disease, among the vaccinated, was not accompanied by phenomena of diphtheria intoxication. It disappeared spontaneously, without antitoxin treatment. This may represent an allergic form of diphtheria sore throat. The complete immunity from anatoxin seems to be preceded by a relative immunity—an allergic phase allow-

ing the development of an attenuated diphtheria. No untoward by-effects were encountered in the nearly 3,000 injections of the anatoxin.

95: 259-302 (March 16) 1926

Is Endamoeba Coli Pathogenic in Man? E. Brumpt.—p. 284.
Epidemic of Relapsing Fever in Spain. Sadi de Buen.—p. 294.
*Neuromas in Cystic Ovary. G. Roux.—p. 295.

Neuromas Responsible for Pains with Cystic Ovaries.—Roux examined a certain number of ovaries with sclerous and cystic degeneration, accompanied by dysmenorrhea, severe pain in the small pelvis and sometimes even epileptic seizures connected with menstruation. He found numerous neuromas, formed from sympathetic fibers, scattered around the arteries; they may explain the nervous manifestations. The lesions of the ovarian parenchyma were relatively insignificant. Periarterial sympathectomy on the hypogastric or the presacral branch might be considered in these cases, he adds.

Presse Médicale, Paris

34: 353-368 (March 20) 1926

*Diagnosis of Occult Branch Block. C. Lian and C. Petit.—p. 353.
*Parathyroid Implant in Tetany. C. Frugoni et al.—p. 355.
Effect of Lumbar Puncture on Diuresis, Glycosuria and Blood Pressure. A. Ravina.—p. 358.

Electrocardiography of Recurring Syncope.—Lian and Petit report cases of recurring syncope without clinical changes of the heart rhythm, or with only slightly retarded heart beat. Electrocardiograms revealed block of the right branch of the bundle of His, thus explaining the tendency to syncopes. One of the patients soon died; another developed a lesion of the whole of the bundle of His. In two cases the functional derangement subsided and the improvement has persisted for two and a half years. By adapting itself to the auriculoventricular dissociation, the heart may correct for a long time the tendency to syncopes.

Parathyroid Graft in Tetany of Adult.—Frugoni, Scimone and Comolli report a case of chronic tetany in a young electrician, associated with epilepsy, both cured by transplantation of a parathyroid gland into the vaginalis of the right testicle. The parathyroids were taken from a girl during an operation for goiter. The technic for the grafting was that of Voronoff. Since the operation, made in June, 1925, there have been no manifestations of epilepsy or tetany. The previous low calcium content of the blood returned to normal at the same time as the phenomena of parathyroid insufficiency disappeared. The graft can be palpated now the same as at first.

34: 369-384 (March 24) 1926

Danger of Primary Suture for Traumatic Wounds. B. Desplas.—p. 369
*Antigen Treatment of Tuberculosis. L. Nègre and A. Boquet.—p. 370.
Partial Resection of Ribs in Pulmonary Tuberculosis. Jacquerod.—p. 371.
*"Channel Fever." J. Bohec.—p. 372.
Is Sciatica a Nerve or Muscle Disease? J. Rouillard.—p. 372.

Extracts of Tubercle Bacilli in External Tuberculosis.—Nègre and Boquet recall that their "methyl antigen" is prepared from tubercle bacilli treated previously with acetone. They have used it in 500 cases of different forms of tuberculosis, in a 10 per cent solution, by subcutaneous or intramuscular injection, in gradually increasing doses to 1 cc. Then the undiluted antigen was employed, gradually increasing to 1 cc.; this amount was never surpassed. The injections were given at from two to eight day intervals; sometimes every day. There was no local or general reaction as from tuberculin. Improvement of the general condition occurred after four or five injections. Sixty cases of external tuberculosis are cited proving the local action of the antigen. Remarkable results were noted in lupus and tuberculous processes of the nasal and laryngeal mucosa, and of glands, bones, joints and peritoneum. Improvement of the local lesions was manifest in from three to eleven months.

"Channel Fever."—Bohec's term is "land fever," for the set of symptoms sometimes experienced when, after an ocean voyage, the ship enters a relatively land-locked body of water. The syndrome is similar to seasickness, and is related to certain forms of asthma, etc., the whole forming an anaphylactic colloidoclastic shock in the emotionally predisposed. Desensitization, both psychic and biologic, is required in treatment.

Riforma Medica, Naples

42: 217-240 (March 8) 1926

Gastroptosis plus Defect in Omentum. D. Giordano.—p. 217.
*Constitutional Eosinophilia. L. Cirio.—p. 219.
Expiratory Metamorphosing Respiration. S. Mongini.—p. 223.
Sport and Hygiene. M. Gioseffi.—p. 234.
F. Redi, 1626-1697. M. Mastrorilli.—p. 238.

Constitutional Eosinophilia.—Cirio reports a case of very high proportion of eosinophils (average 66 per cent) in an otherwise healthy man. The percentage of eosinophils was also above normal in his brother and children (6 to 15 per cent).

Archivos Españoles de Pediatría, Madrid

10: 5-64 (Jan.) 1926

*Asthma in Children. J. González Meneses y Jiménez.—p. 5.
Surgery for Spastic Infantile Paralysis. M. Bastos Ansart.—p. 11. C'td.
*Meningococcus Meningitis in Infant. J. de Cárdenas y Pastor.—p. 50.

Asthma in Children.—González Meneses has found thyroid treatment exceptionally effectual in asthma of the capillary bronchitis type, which is the most common form. The children were between 3 and 8 years old, and some had been having attacks of asthma for years. The treatment was with thyroid tablets, from 0.03 to 0.05 Gm. daily, at one time, kept up for several months. Some of the children have taken them for more than a year, and always without signs of toxic action from these small doses. The brilliant outcome suggests that the asthma was due primarily to thyroid insufficiency. In fourteen cases thus treated, thirteen were completely cured, some of the children having no further attacks from the very first. In the one case in which it failed, the asthma was of the "horse asthma" type. Some time later this child was given an injection of diphtheria antitoxin—as a kind of protein therapy—and the child died in half an hour. Protein therapy should be applied very cautiously to children with asthma.

Meningococcus Meningitis in an Infant.—The special feature of the case was the complete recovery without sequelae under intensive treatment, although it had not been begun until there had been nuchal rigidity for twenty days. Then a total of 120 cc. of the antiserum was injected into the ventricles in six days, and an additional 20 cc. in the three following days, with 60 cc. into the muscles in the first six days. The infant was 6 months old and had been breast fed until the last two months.

Archivos Lat.-Amer. de Pediatría, Buenos Aires

19: 1219-1306, 1925

Erythema Nodosum and Tuberculosis. G. Arśoz Alfaro.—p. 1219.
The Cephaloplegic Syndrome. F. Figueira.—p. 1235.
*Implant Treatment of Joint Disease. C. Robertson Lavalle.—p. 1239.
Tuberculous Peritonitis Cured by a Laparotomy. Bazán and Casaubón. —p. 1272.
*Alcoholism in Children. J. M. Obarrio.—p. 1278.
Malignant Diphtheria. A. Segers.—p. 1290.
Typhoid with Two Relapses. M. Rodella.—p. 1294.

Implant Treatment of Joint Disease.—Robertson Lavalle's method was described in these columns, March 20, page 916. He here brings his record down to date, with nineteen illustrations, confirming the complete cure with his technic which requires only twenty-five days in bed. The list includes tuberculous osteo-arthritis and other lesions of the knee, hip joint and elbow.

Alcoholism in Children.—Obarrio insists that wine and beer are always injurious for children, even in very small quantities. The evil effect may be apparent only during sleep or in change of character or in nervous affections—all the pathologic conditions encountered in adult alcoholics may be observed in children. In his own experience, oneiric hallucinations in children were traceable to chronic alcoholism in 98 per cent of the cases. One child of 5 was extremely irritable and had lost the right Achilles tendon reflex and the liver was much enlarged; she had been given wine and beer since early infancy. One boy of 5 had been given wine for a year, and had developed polyneuritis, alcoholic cirrhosis and oneiric hallucinations. Obarrio has encountered three cases of alcoholic polyneuritis in children, one less than 4 years old.

Revista de Medicina y Cirugía, Caracas

8: 179-201, 1925

Foundation of Mutual Aid Society in the Caracas Medical Society.—p. 179.
*Treatment of Puerperal Fever. L. Razetti.—p. 186. C'cn.
Idem. J. C. Rivas Morales.—p. 199.

Treatment of Puerperal Infection.—Razetti says that in thirty-two years of practice, with hundreds of obstetric cases, including many major obstetric operations, he has had only one instance of grave puerperal infection. This was a premature delivery with acute gonococcal bartholinitis and septicemic fever, but the woman recovered under vaccine therapy, fixation abscesses and local treatment of the bartholinitis. The internal genitals did not seem to be involved at all. He has found that many parturients with high fever, headache and abdominal pains recover promptly after a thorough purge. Acute septic metritis calls for curetting; hysterectomy, to be of any use, must follow the curet within twenty-four hours. He warns not to forget that a parturient may develop typhoid, influenza, malaria, scarlet fever or lymphangitis like any one else.

Revista de Medicina y Cirugía, Havana

30: 611-634, 1925

Cataract Complicating Buphthalmia. J. L. Dehogues.—p. 614.
*History of Cancer in Havana. J. Le Roy y Cassá.—p. 618.
Modern Views of Acute Digestive Disturbances in Infants. R. Rodriguez Martinez.—p. 621.
Experimental Study of the Endocrines. A. J. Coro.—p. 627. C'cn, p. 695.

The first Case of Cancer Reported in Havana.—Le Roy relates that Havana was founded in 1519 but was burned by a French pirate in 1555. No records are available from that date to 1613 when a register was started of the bodies buried in the cathedral. It records the burial in 1637 of a "Portuguese married man with noli me tangere," which was the term applied to cancer in those days.

30: 691-705, 1925

*Cholesteremia in Tuberculosis. R. Grau San Martín.—p. 691.
Supra-Orbital Foramens. Becquer et al.—p. 698.

Cholesterol Content of the Blood in Tuberculosis.—Grau San Martín has confirmed the assertions of Chauffard and others to the effect that the normal average of cholesterol in the blood is 1.5 per thousand. This was the figure he obtained in forty-two healthy persons, while the range in twenty tuberculous subjects was from 0.45 to 1.25, with an average of 0.82. The cholesterol content declines as the disease progresses, and hence it may be an important element in the prognosis.

Revista Méd.-Quirúrgica de los Hospitales, Bogota

1: 219-260 (Dec.) 1925

*Uterine Fibromyomas. R. Ucrós and J. De Francisco.—p. 221.
Present Status of Treatment of Hemorrhoids. L. F. Calderón.—p. 229.
Sympathicotonia in Relation to Dyspepsia. A. Luque B.—p. 231.
Criminal Responsibility from Medicolegal Standpoint. G. Uribe Cualla.—p. 239.
Cholecystography. J. Jaramillo Arango.—p. 244.
Mycoses in Colombia. A. Peña Chavarria.—p. 248. C'tn.
Quinidin in Treatment of the Heart. C. Trujillo Gutiérrez.—p. 257.

Uterine Fibromyomas.—Ucrós and De Francisco analyze 319 operative cases at the San Juan Hospital since 1907, giving thirteen illustrations of various types of fibromyomas. The mortality was 6.2 per cent, excluding the twelve cases in which lesions elsewhere were responsible for the fatal outcome. There were no deaths in 1925. One of the fibromyomas weighed over 22 pounds, and in one case there was such a crop of submucous fibromas that the uterus could scarcely be recognized.

Revista de la Soc. de Higiene y Microb., Buenos Aires

1: 1-10, 1925

*Skin Test for Typhoid. Germinal Rodriguez.—p. 1.

Typhoid Skin Test.—Germinal Rodríguez' years of tentative research in this line have demonstrated that a suspension of two millions of killed typhoid bacilli (in 0.1 cc. of a typhoid vaccine) injected intradermally induces a characteristic reaction if the subject has typhoid, and presumably also if he is susceptible to typhoid; otherwise not. He was unable to isolate a toxin potent enough for such tests, but as typhoid immunity is more bacteriolytic than antitoxic, he believes that the vaccine emulsion answers the purpose better. After the routine antityphoid vaccination, this test should elicit a negative response. The prognosis is grave if the reaction becomes negative in the course of an unmistakable case of typhoid.

Beiträge zur klinischen Chirurgie, Berlin

135: 569-735, 1926

The Blood with Cancer. H. E. Büttner.—p. 569.
*Supravital Staining of Pus Cells. H. v. Lösecke.—p. 587.
Autolysis and Vital Stains. B. Brandi.—p. 595.
Deforming Juvenile Osteochondritis. O. Pollwein.—p. 608.
Myxedema After Thyroidectomy. P. Seulberger.—p. 624.
Tuberculosis of the Knee. F. Martens.—p. 631.
Gaging the Deep Roentgen Dose. H. Rahm.—p. 660.
Bacteriology of the Gallbladder. N. v. Hedry.—p. 665.
Periarterial Sympathectomy. K. F. Schmidhuber.—p. 675.
Furuncles of the Face. E. Melchior.—p. 681.
Central Ruptures of Liver from Contusion. L. Andersson.—p. 696.
Ruptures of Diaphragm from Contusion. L. Andersson.—p. 711.
The Os Tibiale Externum. C. Barthels.—p. 729.

Supravital Staining of Pus Cells.—Lösecke applied Seyderhelm's method (supravital staining with a mixture of trypan blue and congo red) to the examination of wound secretion and exudates. If the latter are not infected, the cells do not accept the dye. In purulent exudates or wound secretions many cells are dead, and consequently they take the stain.

Deutsches Archiv für klinische Medizin, Leipzig

150: 315-380 (March) 1926

*Genesis of Obesity. S. Lauter.—p. 315.
Gastroscopy of the Pylorus. W. Sternberg.—p. 366.
*Gastric Secretion in Tuberculosis. F. Delhougne.—p. 373.

Genesis of Obesity.—Lauter found a relatively lower basal metabolism only in some of his patients with the so-called endogenous type of obesity. The absolute figures were always high. He found no differences in the specific dynamic action of the food nor in the increase of oxygen consumption after exertion in the obese and in the normal. He believes that the tendency of the obese to restrict movements accounts for the storage of fat. The endogenous form of obesity differs in his opinion from the exogenous only in the endocrine etiology of the lack of impulses for movements.

Gastric Secretion in Tuberculosis.—Delhougne found that patients suffering from pulmonary tuberculosis react only slightly and slowly to secretory stimuli. Active tuberculosis entails regularly a subacidity.

Deutsche medizinische Wochenschrift, Berlin

52: 389-430 (March 5) 1926

*Fever Treatment of Multiple Sclerosis. Dreyfus and Hanau.—p. 391.
*Immunization Against Tuberculosis. H. Langer.—p. 396.
*A Reflex in Hyperthyroidism. M. Serejski.—p. 399.
*Drainage After Laparotomy. W. Pohl.—p. 400.
Alkali Treatment of Superacidity. L. Weigert.—p. 401.
*Cerebrospinal Fluid Test. E. Bloch and H. Rosenfeld.—p. 403.
*Structure and Function of the Capillaries. J. Tannenberg.—p. 404.
Toxicosis of Infants. P. Heim.—p. 404.
Treatment of Toxicosis in Infants. E. Nassau.—p. 407.
*Insulin in Toxicosis of Infants. R. Wagner.—p. 409.
Peculiar Rashes in Infants. Engel.—p. 410.
Present Status of Tetany. H. Behrendt.—p. 411.
Pneumonia of Lower Lobe. Engel.—p. 413.
Occupational Diseases. Teleky.—p. 413.
Flexner's "Medical Education." H. Dürck.—p. 415. C'cn, p. 457.

Fever Treatment of Multiple Sclerosis.—Dreyfus and Hanau induced fever in treatment of multiple sclerosis patients. They observed some improvement with typhoid vaccine, and gained a decidedly favorable impression with malaria treatment in eleven out of twelve cases.

Immunization Against Tuberculosis. — Langer injected guinea-pigs with his vaccine, consisting of killed young cultures of tubercle bacilli. These animals survived an intracutaneous injection of tubercle bacilli on an average about twice as long (six and a half months) as the controls.

Reflex in Hyperthyroidism.—Serejski observed a local redness and perspiration in the thyroid region after injections of pilocarpine in patients with symptoms of hyperthyroidism. He calls the phenomenon the "regional vegetative reflex."

Drainage After Laparotomy.—Pohl avoids infection of the main suture by making a small incision to one side and draining through it. The method is similar to that of Tschassownikoff.

Cerebrospinal Fluid Test.—Bloch and Rosenfeld have devised a new colloidal test for inflammatory changes in the cerebrospinal fluid. They base it on the fact that with p_H of 5 the globulins are positively charged while the albumins have a negative charge. With this actual acidity the latter increase the flocculation of night blue by electrolytes; the former stabilize the colloidal solution. The results of the test corresponded to the premises, flocculation occurring in inflammations of the meninges, while the majority of fluids taken from general paresis patients inhibited flocculation.

Structure and Function of the Capillaries.—Tannenberg examined by direct inspection the capillaries in the pancreas and mesentery of living rabbits and frogs. An active contraction is caused by the adventitia cells in the rabbit; the endothelial cells seem to contribute to it in frogs.

Insulin in Toxicosis of Infants.—Wagner advises in desperate cases of toxicosis in infants to use the method he devised with Priesel. They inject a certain quanity of insulin, and from forty-five minutes to an hour later, give an intravenous injection of 150-300 cc. of a 10 per cent solution of dextrose. One unit of insulin should correspond to 50 cc. of this solution. The immediate effect is excellent, but a relapse occurs within twelve to twenty-four hours unless the condition of the intestine has improved. They had to repeat the treatment in certain infants up to five times.

52: 431-472 (March 12) 1926

*Testing of Arsphenamine. W. Kolle.—p. 431.
*Tuberculin Plus Vaccinia. E. Moro and W. Keller.—p. 433.
*Parasitic Origin of Cancer. F. Blumenthal.—p. 435. Begun, p. 389.
Chemotherapy of Cancer. C. Lewin.—p. 438.
*Virus of Smallpox and Herpes. B. Heymann.—p. 442.
*Silent Infection in Weil's Disease. H. Reiter.—p. 445.
*Epidemic Angina Pectoris. H. Kohn.—p. 447.
Roentgen Rays and Organs. G. Gabriel.—p. 449.
Postoperative Internal Hernia. W. Zoefgen.—p. 450.
Hematoma of Abdominal Wall. H. Weitz.—p. 450.
*Cyanide Poisoning from Shoe Cleanser. H. Ullmann.—p. 451.
Treatment of Asthma by Hypnosis. E. Jacobi.—p. 452.
Balneotherapy of Pulmonary Tuberculosis. Kaminer.—p. 454.
Occupational Diseases. Teleky.—p. 456. C'tn.

Testing of Arsphenamine.—As the German patent protecting salvarsan has expired, Kolle has worked out a method for determining the toxicity, and also the curative value of different brands of arsphenamine. Since the resistance of the animals varies, as well as the virulence of the trypanosomes which are used for testing, a standard arsphenamine has been taken for comparison. After this, clinical tests are necessary to avoid the angioneurotic syndrome.

Inoculation with Tuberculin plus Cowpox Virus.—Moro and Keller have made further experiments on the effect of intracutaneous injections of tuberculin plus cowpox lymph. Concentrated glycerol bouillon injected instead of the tuberculin produced the same allergy. A tuberculin free from albumose is less active. Killed lymph is not suitable, but a transitory slight tuberculin allergy was observed after vaccination (without tuberculin). Simultaneous injection of cowpox and old tuberculin on different parts of the body produced the tuberculin allergy.

Parasitic Origin of Cancer.—Blumenthal surveys the recent research on the parasitic origin of cancer and especially the bacillus cultivated by Auler, Meyer and himself from human cancers. They produced cancer in animals by injecting it.

Virus of Smallpox and Herpes.—Heymann quotes Jenner's observations on inhibition of the development of the smallpox vaccine pustule in subjects with herpes or other skin disease entailing serous secretion.

Silent Infection in Weil's Disease.—Reiter produced with attenuated cultures a silent Weil infection in guinea-pigs. The animals for a few weeks resisted reinfection. No silent infection was obtained in trypanosomiasis—probably because this disease does not cause immunity.

Epidemic Angina Pectoris.—Kohn investigated the original reports on the epidemic of angina pectoris on the gunboat *Embuscade* in 1862. Tobacco had often been incriminated, but it is more probable that lead was the cause.

Cyanide Poisoning from Shoe Cleanser.—Ullmann investigated the cause of general malaise and headaches in several girls employed in a shoe store. He found a considerable quantity of cyanide in a fluid shoe cleanser, manufactured by Whittemore Brothers in Boston. A mouse placed in a jar containing 1 cc. of the fluid died within two minutes. He suggests an international prohibition of similar preparations.

Klinische Wochenschrift, Berlin

5: 393-440 (March 5) 1926

Heart Neuroses. M. Matthes.—p. 393.
*Sanocrysin Treatment. H. Ulrici.—p. 398.
*Function of the Ovary. B. Zondek and S. Aschheim.—p. 400.
*The p_H and Disinfection. F. Keysser and O. Ornstein.—p. 404.
Eidetic Phenomena. W. Jaensch.—p. 406.
*Water Metabolism and the Liver. L. Lenaz.—p. 410.
Treatment of Melanosarcoma. J. Borak and F. Driak.—p. 411.
Treatment of Pneumonia. J. J. Daichowski.—p. 412.
Duodenal Reflux. L. von Friedrich.—p. 413.
*Insulin and Diabetes. S. Dietrich et al.—p. 414.
*Allergy to Tuberculin. F. v. Gröer et al.—p. 414.
*Osteosclerosis Fragilis. H. Bernhardt.—p. 415.
Treatment of Gonorrhea. F. W. Oelze.—p. 417.
Distribution of Physicians. Hadrich.—p. 419.

"Sanocrysin" Treatment.—Ulrici had good results in superficial lupus with infiltration of the area with 10-15 cc. of a 2-3 per cent solution of "Sanocrysin," with an anesthetic. Tuberculosis of the larynx or mouth was not cured. He considers his results in pulmonary tuberculosis as fair.

Function of the Ovary.—Zondek and Aschheim implanted different pieces of human ovaries in mice in order to determine the points where the ovarian hormone is produced. In the postmenstrual phase, the retrogressing corpus luteum contains no hormone. The wall of the maturing follicle, the follicular fluid and the fully developed corpus luteum contain the hormone. It is present also in the corpus luteum of pregnancy and—during pregnancy—in the atretic follicles rich in theca cells. It is not certain whether the placenta produces or merely stores the hormone. They believe that the theca cells produce it.

The p_H and Disinfection.—Keysser and Ornstein find that the hydrogen ion concentration is perhaps the most important factor in the action of various disinfectants. Bacteria are killed almost instantly when it is optimal. They had excellent results in treatment of peritonitis with such fluids.

Water Metabolism and the Liver.—Lenaz believes that the assumption of a functional occlusion of the veins in the liver is superfluous. He thinks that the regulation of the water content of the blood is a function of the equilibrium between the hydration pressure of the blood colloids and the capillary pressure. If the former decreases (for instance, after drinking) the fluid filters into the pericapillary spaces—including those of the liver. Apart from the primary changes of hydration pressure, hydremia can occur only with a decrease of the capillary pressure. This may be due to weakening of the heart or to dilatation of the capillaries, especially in vagotonic reactions. A lower level of calcium seems to be responsible for it in the paradoxic epinephrine reaction, hydremia, hepatic opsiuria and hemoclastic crisis.

Insulin and Diabetes.—Dietrich, Häusler and Loewi found that human erythrocytes absorb more dextrose from rabbit plasma taken two hours after an injection of insulin than from the normal plasma. Since insulin increases in vitro the absorption of glucose only in the presence of plasma or serum, they conclude that it acts only indirectly in modifying the serum. It seems that the substance which is directly responsible for the increased avidity of erythrocytes, is dialysable. They found also that the serum from diabetic patients or animals with epinephrine glycosuria inhibits the absorption of dextrose by normal erythrocytes. The dialysate of such serums inhibits it also.

Allergy to Tuberculin.—Gröer, Progulski and Redlich confirm the artificial production of tuberculin allergy by injection of a mixture of tuberculin and hog serum: Guinea-pigs sensitized with it reacted with an anaphylactic shock to reinjection of the mixture, but not to hog serum alone, and only slightly to tuberculin. Injection of a mixture of hog serum with cowpox vaccine killed by heat produced a slight tuberculin allergy in children.

Marble Bones Disease (Osteosclerosis Fragilis).—Bernhardt reports a typical case of Albers-Schönberg's disease, with spontaneous fractures, diffuse endostal osteosclerosis,

disturbance of growth, suppurations, splenomegaly and enlargement of lymph nodes with myeloid metaplasia. The anemia is secondary—due to the loss of functioning bone tissue. Splenectomy has been suggested, but this is irrational since the spleen is the most important seat of the regeneration of the blood in such patients. Treatment with ammonium chloride did not help much.

5: 441-488 (March 12) 1926

Lipoid Nephrosis. V. Kollert.—p. 441.
*Pure Cultures of Spirochetes. H. Reiter.—p. 444.
*The Blanching Phenomenon. Zlatogoroff and Derkatsch.—p. 445.
*Skin and Lymph Nodes. H. Martenstein and S. Amster.—p. 449.
Registration of Fetal Heart Sounds. G. Schwarz.—p. 451.
Calcium, Thrombin and Coagulation. E. Kaufmann.—p. 453.
Concussion of the Brain. A. Ritter.—p. 456.
Hysteriform Conditions. R. Thiele.—p. 460.
Etiology of Lentigo Nevus. F. K. Scholl.—p. 463.
Swimming Pool Conjunctivitis. M. Fischer.—p. 464.
*Dextrose and Cancer. P. Rondoni.—p. 465.
*Pharmacology of Sulphur. E. Bürgi and T. Gordonoff.—p. 466.
Dietotherapy of Tuberculosis. E. Helmreich.—p. 466.
Neurosis in a Violinist. R. Allers and W. Kern.—p. 467.
Prognosis of Hypertension. R. Ehrström.—p. 469.
Is Cancer an Infectious Disease? Teutschlaender.—p. 470.
Three-Way Cock in Puncture and Infusion. H. Strauss.—p. 485.

Pure Cultures of Spirochetes.—Reiter describes solid and fluid mediums for cultures of spirochetes. They are suitable for preparation of Klopstock's antigens. He also mentions therapeutic results of injections of living *Spirochaeta pallida* cultures in general paresis patients after the treatment with therapeutic relapsing fever had failed.

The Blanching Phenomenon.—Zlatogoroff and Derkatsch obtained the Schultz-Charlton blanching phenomenon with the serums from animals immunized with the streptococcus toxin or immunized with living virulent cultures of streptococci. Killed germs induced formation of agglutinins and complement fixation antibodies, but no blanching properties. They conclude that the substances responsible for the Schultz-Charlton phenomenon are formed in response of the organism to the scarlet fever streptococcus. They are not present in the euglobulin fraction of the serum.

Skin and Lymph Nodes in Tuberculosis.—Martenstein and Amster infected guinea-pigs intracutaneously with 0.01 mg. of tubercle bacilli. They observed a local periodic exacerbation, healing and recurrence. The regional lymph nodes showed at the same time an almost opposite curve—swelling with the regression of the cutaneous process and vice versa. The smaller the infecting dose, the larger were the lymph nodes in their experiments.

Dextrose and Cancer.—Rondoni found that injections of dextrose had an enhancing action on the development of precancer warts on the tarred ears of rabbits.

Pharmacology of Sulphur.—Bürgi and Gordonoff found two or three times as much glycogen in the livers of rabbits fed for a longer period with sulphur as in the controls. They point to the sulphur content of insulin found by Abel and Geiling.

Medizinische Klinik, Berlin

22: 357-396 (March 5) 1926

*Spasmophilia. W. Stoeltzner.—p. 357.
Pathogenesis of Tetany. H. Beumer.—p. 360.
Tonic Innervation. J. Pal.—p. 363.
Roentgen Diagnosis of Pulmonary Tuberculosis. W. Olshausen.—p. 364.
Subcutaneous Rupture of the Pancreas. G. H. Feist.—p. 366.
Syphilis of Cranial and Spinal Nerves. W. Mestitz.—p. 369.
*Hormones and Vitamins. L. Wolfer.—p. 372.
Atresia of Vagina. E. Reiner.—p. 373.
*Quinine Rash. E. Zacharias.—p. 373.
Herpes Zoster and Chickenpox. E. Lauda and E. Silberstern.—p. 374.
Arteriosclerosis and Accident Insurance. W. Brandis.—p. 377.
Treatment of Gout. A. Mahlo.—p. 379.
Insurance Medicine. P. Horn.—p. 382.
History of Treatment of Wounds. H. Stegemann.—p. 393.

Spasmophilia.—Stoeltzner restricts even in latent spasmophilia the daily intake of cow's milk to one half of the previous amount, giving a pint as the maximum. In manifest spasmophilia, fasting for a day and a milk-free diet later are indicated. The food, however, must not consist solely of sweetened flour gruels; bouillon, proteins, fat have to be added. A teaspoonful of cod liver oil should be taken twice daily for months. In grave conditions, he prefers to give for a few days twice daily 5 Gm. of the solution: phosphorus, 0.01; oleum jecoris aselli, 100.0 parts. With persisting laryngospasm, large doses of calcium may be necessary: he gives then for five hours every hour 1 Gm. of dry calcium chloride (or 2 Gm. of the crystallized), then every three hours another gram, thus administering about 10 Gm. within the first twenty-four hours. After this 1 Gm. of the dry calcium chloride should be given six times daily. The doses should be reduced with clinical improvement, returning to the original large amounts if the spasm reappears.

Hormones and Vitamins.—Wolfer found with Bock's method in the blood from patients with extremely acute psychoses large amounts of anisotropic droplets. He observed similar droplets in various vegetable and animal extracts containing vitamins.

Quinine Rash.—Zacharias' patient had an itching vesicular eruption on the inner side of thighs, the scrotum and the penis. He had had a similar rash on the scalp before, after using a hair tonic containing quinine. This time the eruption was due to the quinine in the contraceptive preparation used just once by his wife.

Monatsschrift für Geb. und Gynäkologie, Berlin

72: 249-376 (March) 1926

Early Diagnosis of Pregnancy. A. Dienst.—p. 249.
The Campaign Against Syphilis. F. A. Scheffzek.—p. 256.
Polyps on the Placenta. W. Rosenstein.—p. 264.
*Pregnancy Ileus. L. Luchs.—p. 270.
*The Kielland Forceps. H. Baumm.—p. 284.
Smallpox in a Maternity Hospital. G. Hoppe.—p. 290.
*Congenital Dislocation of the Hip Joint. H. Krukenberg.—p. 295.
Virulence of Streptococci and Staphylococci. G. J. Pfalz.—p. 298.
Adenomyosis. B. Langen.—p. 303.
*Ovarian Hemorrhage or Pregnancy? M. Traugott.—p. 307.
Incarceration of Myomatous Uterus. F. Istel.—p. 315.
Puerperal Vesicovaginal Fistula. E. Graff.—p. 319.
Vagina Made From Bladder. H. H. Schmid.—p. 330.

Pregnancy Ileus.—Luchs draws attention to pyelitis among the causes of ileus in pregnancy.

The Kielland Forceps.—Baumm extols the advantages of the Kielland forceps for the practitioner. He is opposed to Fränkel's advice to perform cesarean section if the high forceps fails. Even with slight traction, made by a good obstetrician, the forceps may injure the child's brain gravely. Failure of forceps is an indication, he says, for perforation and for nothing else.

Etiology and Prevention of Congenital Dislocation of the Hip Joint.—Krukenberg points out that a paper on this subject would be out of place in a journal devoted to obstetrics, if it were not possible for the obstetrician to prevent the dislocation. The anomaly is not to be found in new-born infants. There is only a predisposition in the smallness of the ossification nucleus of the head of the femur, and shallowness of the acetabulum. Anteversion of the neck of the femur exaggerates this predisposition. The torsion is present in 20-30 per cent of the new-born, in 12 per cent of adults, and does not occur at all in fetuses of 4 months and in quadrupeds. With extension of the femur, its head leaves the anterior margin of the acetabulum in proportion to the degree of anteversion. The simultaneous stretching of the iliopsoas increases the anteversion further. These considerations as well as the frequency of dislocation in children born in breech presentation, led him to attempt to produce a similar condition in dogs. He put three puppies on the fifth day, without undue force, in a plaster cast which kept the hind legs extended for fourteen days. The male puppy remained normal, but the two females developed gradually all the signs of "congenital" dislocation of the head of the femur. These experiments confirm the fact that the dangerous stage for dislocation occurs at the time of the extension of the thigh. It is therefore essential for its prevention to avoid wrapping up the baby's legs in the extended position and to take care to refrain from trying to teach the child to walk until it changes spontaneously from crawling to the erect position. This applies with special force if the child was born in breech presentation, and if dislocation of the hip joint has otherwise occurred in the family. Roentgen examination is necessary with the slightest disturbances in gait, since a beginning dislocation may be cured without operation or plaster cast.

Ovarian Hemorrhage or Pregnancy?—Traugott admits the possibility of grave hemorrhage from the ovary only in leukemia, phosphorus poisoning, extensive burns, hemorrhagic diathesis, hypertension and neoplasms or acute torsion. All the other reported instances were, probably, overlooked extrauterine (usually tubal) pregnancy. Of such was his case with apparent bleeding from a large ruptured cyst in the ovary in a young unmarried woman. The ovum was found in the abdomen but the tube was macroscopically normal. Sections revealed syncytial cells resembling chorion.

Münchener medizinische Wochenschrift, Munich

73: 311-352 (Feb. 19) 1926

Tabetic Atrophy of Optic Nerve. C. Behr.—p. 311. C'td.
*Action of Sanocrysin. E. Le Blanc.—p. 313.
*Specific Dynamic Action. K. Bahn.—p. 315.
Chronic Gastritis. R. Korbsch.—p. 317.
The Dead Point in Roentgenotherapy. Thedering.—p. 319.
Diffusion of Local Anesthetics. R. E. Liesegang.—p. 320.
Malta Fever. F. Weyrauch.—p. 321.
*Phenobarbital in Breast Milk. Frensdorf.—p. 322.
Obstetrics from Medicolegal Standpoint. M. Hofmeier.—p. 323.
Diet in Grave Tuberculosis. E. Andersen.—p. 324.
Spirochetes in Poultry. A. Demnitz.—p. 325.
Scrofula. F. Jamin.—p. 326. C'cn.
Earth Alkalis. E. Wiechmann.—p. 328.

Action of "Sanocrysin."—Le Blanc tried "Sanocrysin" at Brauer's clinic in the original dosage (0.5-1 Gm.). The toxic reactions were the same in tuberculous and nontuberculous subjects. He does not hesitate to declare that the shock is a manifestation of metal poisoning—not of cleavage products from the tubercle bacilli. He saw no demonstrable specific action of the drug in tuberculosis.

Specific Dynamic Action.—Bahn finds that the intensity of the specific dynamic action of proteins is determined by the tonus of the vegetative nervous system. A certain inverse proportionality between the height of the basal metabolic rate and of the specific dynamic actions was confirmed. He thinks that various hormones change the specific dynamic action indirectly by influencing the basal metabolic rate.

Phenobarbital in Breast Milk.—Frensdorf gave an epileptic woman three times daily 0.1 Gm. of phenobarbital for a few days before and after labor. Her child was normal at birth, but became gradually more and more sleepy. She recuperated after the mother had discontinued the drug.

73: 393-432 (March 5) 1926

*Treatment of Surgical Infections. A. Krecke.—p. 393.
Progressive General Paresis. F. Plaut and F. Jahnel.—p. 396.
German Rhubarb. H. Führer.—p. 400.
Reflexes of Abdominal Organs. W. Ruhmann.—p. 401.
Exhumation and Social Insurance. E. Franck.—p. 402.
Terminal Disinfection. W. Rimpau.—p. 404.
Periodic Examinations. F. Kaufmann.—p. 406.
Technic for Phototherapy. P. Stumpf.—p. 408.
Digestion and the Heart. F. Crämer.—p. 409.
The Plague in Russia. H. Zeiss.—p. 411.

Treatment of Surgical Infections.—Krecke extols the benefits of Bier's method of treating infections from instruments contaminated with pus. He uses hot dressings and twice daily a local bath of half an hour to an hour's duration in hot chamomile tea. No aluminum subacetate or alcohol dressing should be used. As soon as pus appears (not sooner), surgery is necessary. Several small incisions are preferable to one large. The large tumors of cervical lymph nodes, which are frequent after scarlet fever and measles, often yield to hot applications. A patient with a furuncle of the face—no matter how innocent it looks—should stay in bed. Every occupation—including the mental—as well as all talking and company are prohibited. An ointment should be applied locally and be covered with a small hot chamomile bag. An elastic band, 2 cm. wide is applied to the neck and drawn as tight as the patient can comfortably stand. It should stay on every day from noon till 8 a. m. the next morning. The core must not be expressed, and no superficial incision made. The patient must not get up until the core has been cast off. Local injections of chemotherapeutic preparations are liable to injure the tissues. Many patients with empyema of the pleura, especially in children, recover after simple punctures. An early incision is necessary in a panaritium, acute purulent inflammation of the lower jaw and the deep phlegmon of the neck or forearm. General anesthesia is essential. With a mere paronychia, the phalanx should be smeared thickly with gray ointment and covered with a protecting dressing. Slight pain occurs on the second day, but the finger is healed within eight days.

Wiener klinische Wochenschrift, Vienna

39: 265-292 (March 4) 1926

Angina Pectoris. L. Braun.—p. 265. C'td.
*Action of Roentgen Rays. G. D. Lieber.—p. 269.
Syphilitic Cachexia. K. Herman.—p. 272.
Peptic Ulcer and Test Meal. E. Schütz.—p. 272.
Immunology and Epidemiology. W. Böhme.—p. 273. C'cn.
Treatment of Pulmonary Tuberculosis. F. Eckhart.—p. 276.
Treatment of Facial Paralysis. A. Fuchs.—p. 277. C'cn.
A Social Insurance Sanatorium. E. Suess.—p. 279.
Syphilis of Respiratory Passages. M. Hajek. Supplement.—p. 1-12.

Action of Roentgen Rays.—Lieber believes that the antagonism between potassium and calcium is closely connected with the Donnan equilibrium. With a special method, he found in sections from skin a large amount of potassium around the hair follicles and in the epidermis. It increases the permeability of the cell wall. Calcium is present in the connective tissue only in a regular network arrangement. After exposure of the skin to a depilatory dose of roentgen rays, the amount of potassium decreases after five days, and the calcium moves toward the epidermis and around the hair follicles. This process progresses until the fourteenth day—when the loss of hair suddenly sets in—the potassium is no longer present in the epidermis, and a layer of cells containing plenty of calcium has practically usurped the place of the original epidermis. Before the beginning of any visible repair, the surroundings of the hair follicles and the regenerating epidermis fill with potassium, and the calcium recedes. He is extending this research to roentgen treatment of tumors.

Zentralblatt für Gynäkologie, Leipzig

50: 577-640 (March 6) 1926

*Capillaries in the Pregnant. Pischzek and P. Schmidt.—p. 578.
Echinococcosis of the Ovary. J. W. Miller.—p. 585.
*Rupture of Uterus After Cesarean Section. M. Wetterwald.—p. 592.
A New Forceps. E. Zweifel.—p. 604.
Perforation of the Uterus. F. Süssmann.—p. 606.
Histology of Chorea Gravidarum. K. v. Lehoczky-Semmelweis.—p. 608.
"Obstetric Rectal Examination." Dipper.—p. 611.
*Older Primiparas. R. Remmelts.—p. 613.
Prolapse and Constitution. K. Burger.—p. 615.
Treatment of Retroflexion. A. Werner.—p. 621.

The Capillaries in the Pregnant.—Pischzek and Schmidt observed pronounced tortuosities both in the afferent and the efferent capillaries of skin in three women with hydramnion. The capillaries changed back to normal after the childbirth. There were other changes in pregnant women with edema.

Rupture of Uterus After Cesarean Section.—Wetterwald points to the lessened danger of rupture of the uterus in a subsequent labor after cervical cesarean section as compared with the classic technic. Placenta praevia increases the danger of rupture.

Older Primiparas.—Remmelts concludes from his material of 103 primiparas over 30 years old that the question of difficult labor in them is merely a question of constitution. Those with hypoplastic sex organs, late menarche, slight menstruation, small fertility, and tendency to abortions, tend to have a prolonged labor.

Mede. v. d. Dienst der Volksgezond., Batavia

345-462, 1925. English Edition

Annual Report of the Civil Medical Service in the Netherlands East Indies for 1923.—p. 345.

1-98, 1926. English Edition

*The Molucca Islands. F. Kopstein.—p. 1.
Classification and Habitat of Local Mosquitoes. E. Rodenwaldt.—p. 79.

The Moluccas.—Kopstein's official mission to these islands was to seek for cases of leprosy, but he reports on general medical conditions and habits. Among the peculiar customs described is that small separate huts are provided to which the women must change during the menses, and where the women are delivered. From the first consciousness of a pregnancy, sexual intercourse with the husband is forbidden. Leprosy is common, and is increasing in certain regions; no precautions are taken against infection by it.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 509-624 (Feb. 6) 1926

*Fever in Course of Syphilis. C. W. Bottema.—p. 510.
A Diverticulum at the Duodenojejunal Flexure. Orbaan.—p. 516.
*Diagnosis of Death of Fetus. J. van E. Tengbergen.—p. 522.
*Pituitary Extract to Initiate Labor at Term. M. H. G. A. Tholen.—p. 526.
The Manuscripts of Guy de Chauliac, M.D., 1363. J. G. de Lint.—p. 530.
*Hippocrates in Art. J. B. F. van Gils.—p. 542.
*Medical Topics at International Congress on Goat-Breeding. E. Brouwer.—p. 576.

Fever in Course of Syphilis.—Bottema warns the general practitioner not to be misled by the presence of fever to overlook the possibility of a syphilitic origin for the symptoms presented, although fully 75 per cent of all cases of syphilis run their course without fever. In one of three typical cases described, there was no other manifestation of the syphilis at the time, and the only proof of the nature of the high fever returning every day was its immediate subsidence after a single injection of neo-arsphenamine. In another case the fever accompanied bronchitis, with headache and cough but no expectoration, four or five years after the acquiring of syphilis. There was also a diffuse roseola, similar in every respect to a primary roseola. The symptoms, including the bronchitis, all promptly subsided under treatment with arsenicals. He adds that although the whole of pathology is not included in tuberculosis, syphilis and diatheses, yet these three should always be held in mind.

Roentgen-Ray Diagnosis of Death of the Fetus.—Tengbergen found Spalding's sign (lapping of the skull bones) in ten of eighteen cases of intra-uterine death of the fetus examined with the roentgen rays. The age of the fetus ranged from 26 weeks to term. The heart sounds had been heard up to seventy-two hours before in one case and fifty-six days in another. The fetuses always proved to be more or less macerated. In one of the two cases in which this sign was probable but not distinct, there was hydrocephalus. In two others, gas in the intestines obscured the findings. In two other cases the skull bones gaped; he has never beheld this in a normal pregnancy, and thinks that it can be accepted as a sign of death of the fetus at least eight days before. In these cases the fetus could not have been dead for more than eleven and thirty-six days. The pregnancy was in the eighth or ninth month and the fetuses were macerated and putrid. In two other cases the first examination was made during the interval between the lapping of the bones and the gaping; the roentgenogram showed apparently normal conditions as to the interline of the cranial bones, but after expulsion of the macerated fetus the bones had the same loose feeling inside the scalp as in the other cases. Comparison of roentgenograms from previous years revealed the lapping or the gaping of the cranial bones as never occurring in normal cases. The physiologic lapping of the bones during actual delivery can never lead to confusion. Another sign of the death of the fetus is the small size of the fetus in comparison to the phase of the pregnancy. The inability to obtain clear pictures of the skull bones—other conditions being favorable—suggests death and decalcification of the bones. The article is illustrated.

Pituitary Extract to Initiate Labor at Term.—Tholen gave an intramuscular injection of a small dose of pituitary extract to forty-eight women who were waiting for labor at term, usually after rupture of the bag of waters. Labor pains followed in from half an hour to an hour in 76 per cent of the primiparas and in 77 per cent of the multiparas. In five cases requiring premature delivery, the pituitary treatment had no apparent effect. In those cases in which only false labor pains followed the pituitary extract, a sedative was injected at once. The pituitary extract was preceded with castor oil, and the injection was repeated once or twice. The fetal heart sounds were constantly supervised, and no untoward by-effects were observed in either mother or child.

Hippocrates' Visit to Democritus.—Van Gils continues his study of the works of art of the Amsterdam school which date from the seventeenth century and portray what he accepts as the visit of Hippocrates to Democritus. They have hitherto been labeled "Saul's Visit to Samuel," "Antiochus' Visit to the Oracle," or "Heraclides' Visit to Democritus."

Tuberculosis in Goats and Goat's Milk Anemia.—Brouwer states that the second international congress on goat breeding was held recently at Freiburg, and Zwagerman and Scheurer presented a survey of the goat's milk anemia question, while Koestler reported a comprehensive physical and chemical study of goat's milk compared with cow's milk. De Blieck reported that he had found tuberculosis in twenty-four of about 500 goats examined in the Netherlands. Timmermans' figures in 1910 were 0.153 per cent of 49,030 goats in the Netherlands to that date.

1: 625-740 (Feb. 13) 1926

*Preparedness for Marriage of Female Organs. T. H. van de Velde.—p. 626.
*The Mechanism of Diabetes. B. Sybrandy.—p. 632.
*Means to Reduce Intra-Ocular Tension. De Jongh and Wolff.—p. 647.
*Clinical Value of Cholesterol Tests. S. Brandes.—p. 650.
*Cultivation of Actinomyces. G. A. Rademaker.—p. 658.
*Hydrocephalus and Breech Presentation. T. H. M. Platte.—p. 664.
Two Attacks of Measles. C. C. van der Heide.—p. 665.

Preparedness for Marriage of the Female Sex Organs.—Van de Velde expatiates on the disease and unhappiness that might be prevented if sexual infantilism were corrected before marriage so that the sexual life could be normal from the first. He pleads for rectal examination to ascertain the condition of the sex organs, and appropriate treatment if found underdeveloped. The examination could be made without the girl's understanding its purpose, on the occasion of some indisposition or examination for life insurance. If the uterus is not over 3.5 cm. long, the condition is rudimentary rather than infantile, and not much can be hoped from treatment. But with infantile organs, ovarian treatment, diathermy and vibration massage of the uterus may accomplish much. The latter alone may suffice. The uterus is pressed against the abdominal wall by the finger in the rectum, and the massage instrument is applied to the abdominal wall. At necropsies in cases in which diathermy had been applied, he has been amazed at the intense circulation through the parts and the swelling of the tissues, testifying to the effect of the diathermy while warning of the necessity for caution. This triple treatment may cure menstrual disturbances and improve the general condition. He applies the vibration massage every day or two for seven to fifteen minutes, in a six or eight weeks' series, with a second series at need, a long pause between.

Mechanism of Diabetes.—Sybrandy explains that the hyperglycemia in diabetes is due to the defective metastasis of glucose, that is, the distribution of glucose to the liver, heart and other tissues. Insulin promotes this metastasis of glucose—the blood-sugar circuit, as he calls it—the liver and muscles constantly producing glucose which is transformed into glycogen and back again.

Means to Reduce Intra-Ocular Tension.—De Jongh and Wolff announced in 1924 that the serum of animals which had been having convulsions contains some substance which seems to have the power to reduce intra-ocular tension. They proved this with secondary glaucoma in rabbits, and they here confirm these findings and also report the reduction of intra-ocular pressure in a rabbit with spontaneous, natural glaucoma.

Clinical Import of Cholesterol.—Brandes concludes the report on his extensive research on cholesterol with the statement that it has no value in the differential diagnosis of dubious gallstone cases nor in the prognosis in nephritis or diabetes. But in pernicious anemia, estimation of the cholesterol may be instructive. There is evidently some connection between cholesterol and the pernicious process, but its nature is not known. The attempts to treat pernicious anemia with cholesterol have never proved successful.

Mycoses.—Rademaker describes four cases of actinomycosis and two of bothriomycosis; in a third case, with the presumptive diagnosis of the latter, the affection proved to be molluscum contagiosum.

Delivery of Child with Hydrocephalus in Breech Presentation.—Platte introduces a trocar into the fetal skull through the mother's abdominal wall when all means to deliver the child without perforation have failed. The fluid spurts and the obstacle to delivery is thus removed.